APRIL, 1961

AMATEUR RADIO

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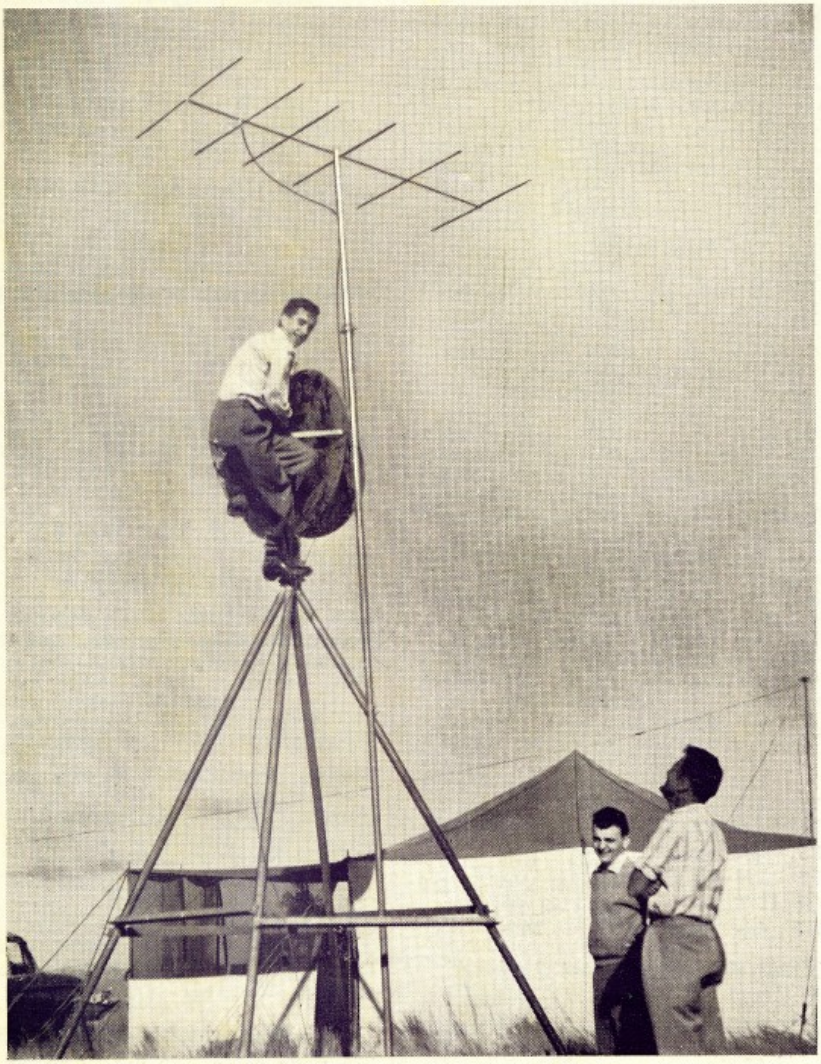

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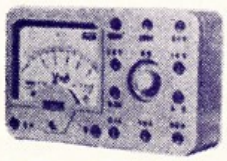

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AMATEUR RADIO

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EDITORIAL

★

AMATEUR RADIO PROGRESS

LOOKING back over twenty-five, fifty years, of communication by radio or "wireless" waves, someone has always written about "progress" and reviewed "modern techniques" as used "today" compared with "yesterday".

Since the early Amateurs pioneered the short wave bands and first demonstrated to the world that international communication by such means was possible, the Amateur Service has been in the forefront of these progress reports.

From the early spark days to the bread-board layout and the triode valve; from the metal chassis and crystal oscillator to the all-band beam pentode final, v.f.o. controlled, the Amateur has demonstrated his ability with modern techniques.

Ten years ago—well ahead of the field of commercial communication equipment—the Amateur commenced interesting himself in **suppressed carrier transmission** (s.s.b., A3a). Today—so many years after—the commercial field is looking to s.s.b. to help solve its problem in finding sufficient room in the overcrowded bands for the mushroom growth of communication services required under 1961 standards.

Because of overcrowding in the Amateur bands, the bulk of Amateurs today are leaning more towards this form of transmission—a system generally recognised as being profoundly more suitable for long distance work, greater "talk power" and a "system benefit" of about 9 db. in comparison with conventional amplitude modulation.

Apart from the power gain, s.s.b. allows many more stations to operate without mutual interference in a given band of frequencies, minimises heterodyne interference, and makes it easier to operate with full voice break-in (VOX) systems. Like all other advances in the field of transmission, s.s.b. has its protagonists and its antagonists. Nevertheless, every Amateur who has studied the problems besetting the world in maintaining a semblance of order in the use of the bands for the countless services currently operating in this age, will quickly appreciate that, as far as the Amateur Service is concerned, s.s.b. is the answer to the congestion in our severely restricted frequency bands as compared to the pre-war years.

Don't forget, our numbers have tripled on a world-wide basis as compared with pre-war years, but our frequency allocations have shrunk. We are therefore destined to remain in the forefront of "progress reports" and utilise to the full the latest modes of transmission. Certainly we can't all do it, but we can, within reasonable limits, keep up with those who pioneered the way for us. S.s.b. is the immediate answer to ours and the commercial problem, a fact which we forecast to be proved true in the next few years.

FEDERAL EXECUTIVE.

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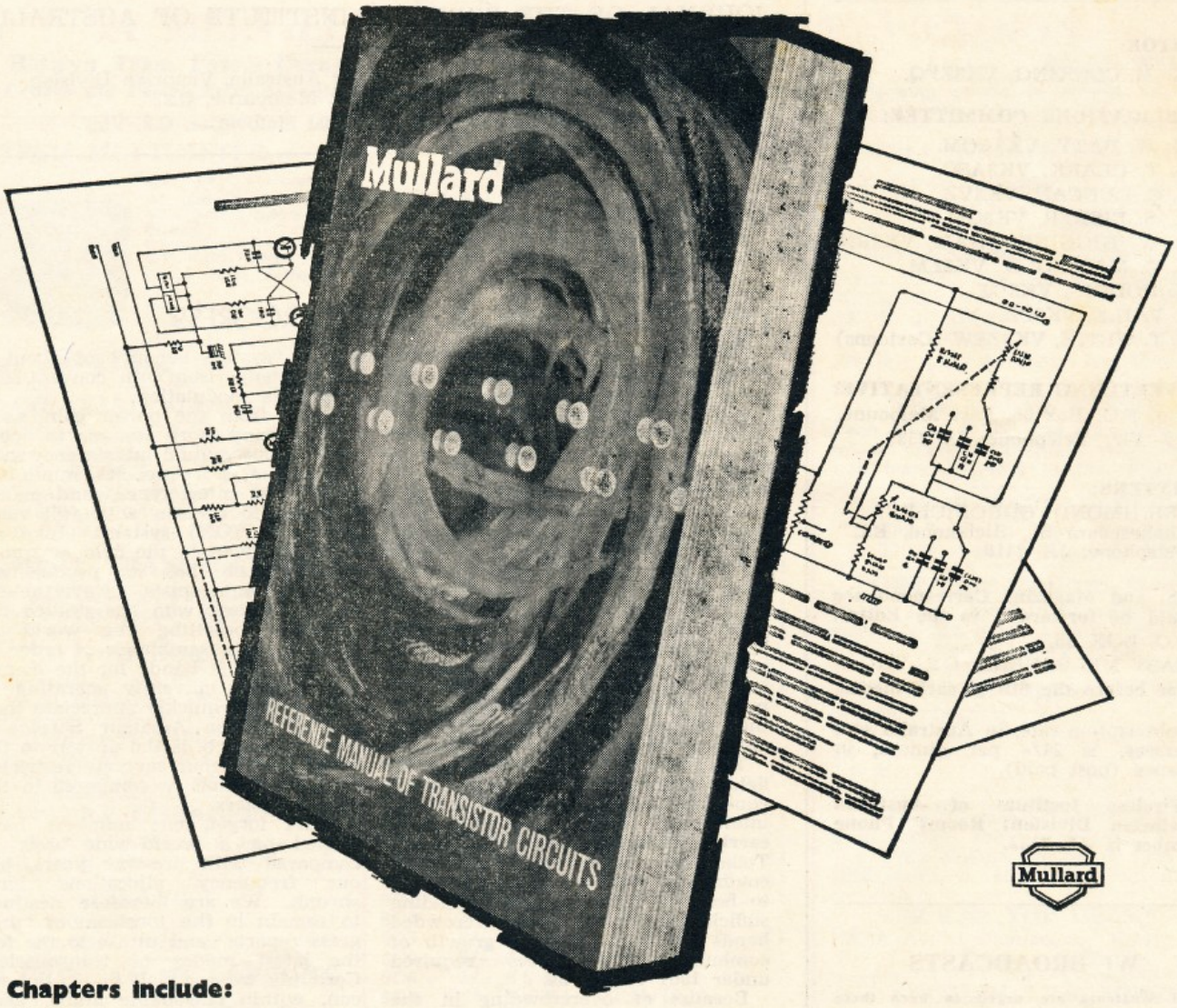

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A FREQUENCY METER

BY AN AVID "A.R." READER

THIS article has been written mainly for the newcomer to the Amateur bands and who is perhaps wondering how the problem has been attempted by someone else. I would first like to thank the Amateurs who may recognise something of their own and to whom I am in debt to for their many suggestions and help.

The frequency meter described is a reasonably simple unit, but depending on the reader's need, it could fulfil the basic part of a more complex instrument.

A good vernier dial is an essential. There are two types available from disposals stores and both are excellent. The dial I use is a 6 inch calibrated 0-100 main scale with a small vernier knob reading 1/20th of each division. The other dial is a thumb-moved vernier with which it is possible to read 2,500 divisions. While this dial may be more difficult to mount, it may be easy to obtain from a disposals tuning unit.

The case is a new steel type 8" x 13" x 7" with louvred sides, a removeable front, and finished in grey hammertone.

A small chassis was firmly mounted to the front panel with metal end brackets. The main tuning condenser was mounted above the chassis and coupled to the dial with two flexible couplings. The dial was also screwed to the panel and with a little care an excellent drive is achieved.

The variable oscillator tunes from 3.360 to 3.710 Mc. This will give adequate bandspread on 28 Mc., but in building another meter, I would arrange it to tune a slow as 3.2 Mc. so as to give a further check of calibration with WWV on 10 Mc.

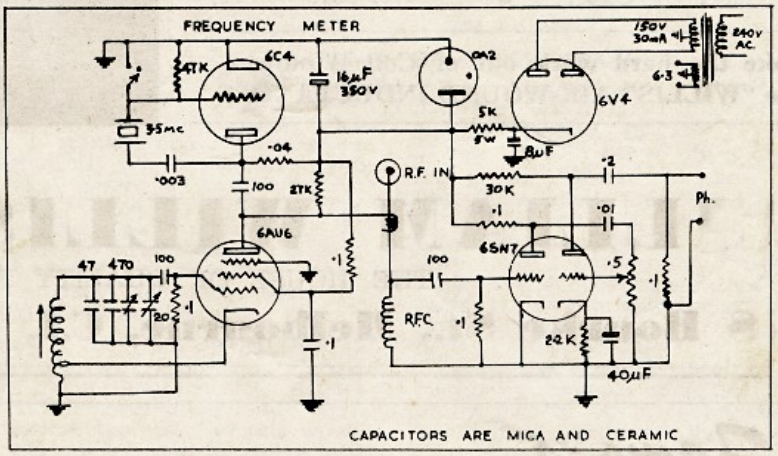
The ceramic variable trimmer condenser is mounted underneath and to the front panel. The horizontally mounted coil is also underneath the chassis and is a ribbed ceramic former type. A check through the junk box may locate a large diameter (1" to 2") coil which is already wound. As the values of the various tuning capacitors can be altered, it is well worth experimenting with any available coil.

In my case, the 3.5 Mc. coil from an AT5 v.f.o., modified to 14 turns (cotton covered about 18 or 20 gauge wire) and tapped at 5 turns from the earth end. The main tuning condenser is a ceramic mounted single gang broadcast type with only three moving plates left. This is also from an AT5. In various experiments with different coils and condensers, it was found difficult to arrive at the right bandspread and tuning required. For this reason a slug tuned coil was used—the slug being locked into place with paint when the unit was calibrated.

The frequency coverage is extended below the 3.5 Mc. Amateur band as it was found that with the non-linear condenser used, better bandspread was obtained as the condenser came out of mesh. The slug was therefore adjusted to bring the 3.5 Mc. position at approximately 20 degrees.

The oscillator valve is mounted upright beside the gang in a ceramic socket. All components were mounted for minimum wiring which was done with heavy insulated copper wire, laced where necessary.

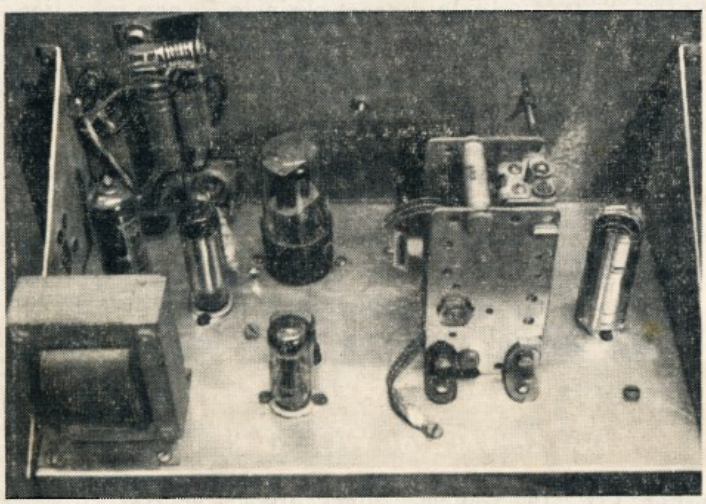
A 6C4 valve is used as a 3.5 Mc. crystal marker. A miniature disposals crystal was used and the grid of the tube switched to earth when the oscillator is not in use. A 1 Mc. crystal may be used but there are less confusing harmonics with a 3.5 Mc. fundamental.

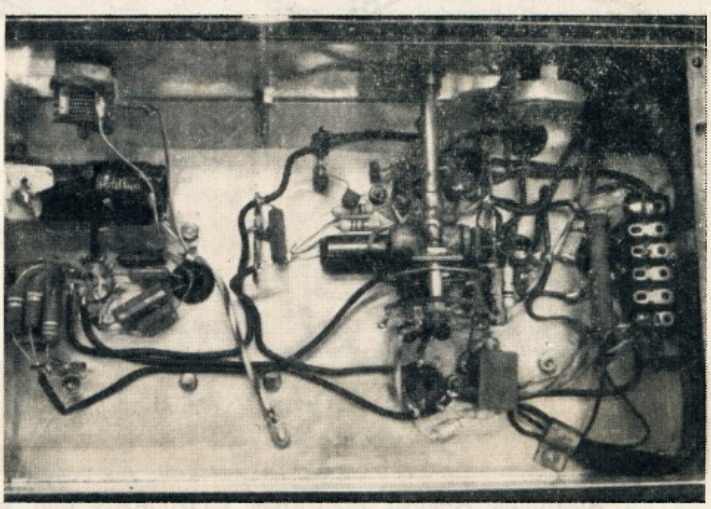


The output is to a pair of phones from the 6SN7 or 12AU7. One triode serves as a mixer and the other one as a resistance coupled amplifier. This is fitted with a gain control and was found to be quite useful when the instrument is used to monitor transmissions.

A conventional 150v. power supply and OA2 voltage regulator are mounted on the chassis—the opposite end to the oscillator components. When the unit is assembled, the power transformer is

(Continued on Page 12)





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1-16	½"	16	3"	No. 3003	5/3
2-08	⅝"	8	3"	No. 3006	6/3
2-16	⅝"	16	3"	No. 3007	6/3
3-08	¾"	8	3"	No. 3010	7/4
3-16	¾"	16	3"	No. 3011	7/4
4-08	1"	8	3"	No. 3014	8/5
4-16	1"	16	3"	No. 3015	8/5
5-08	1¼"	8	3"	No. 3018	10/6
5-16	1¼"	16	3"	No. 3019	10/6

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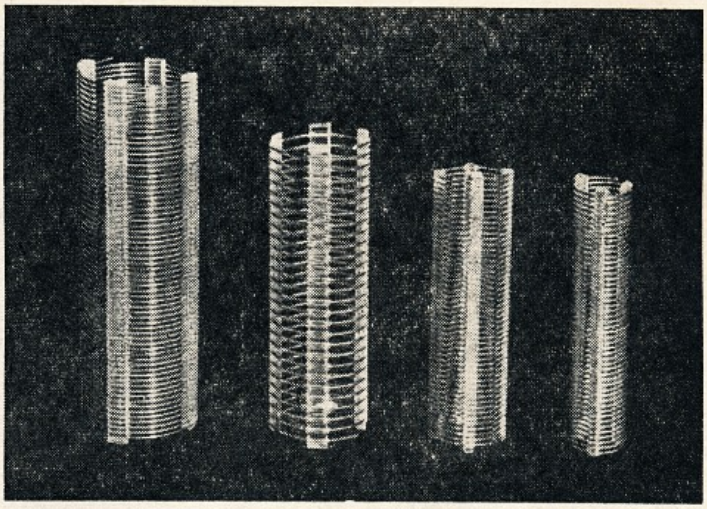

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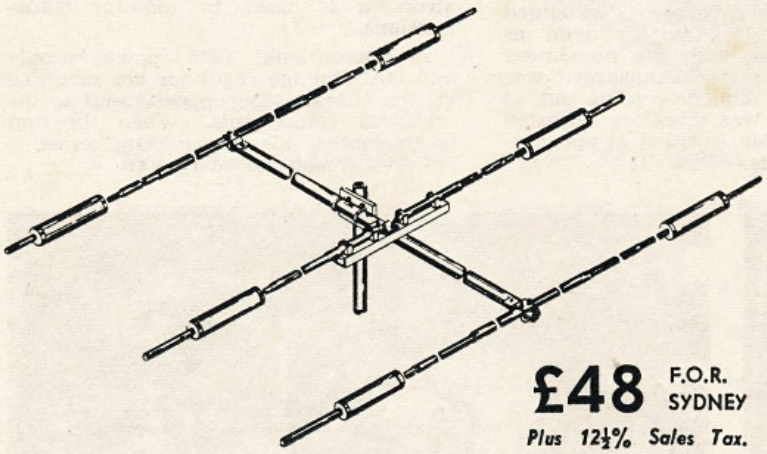

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With proper installation, your TA-33-JR will provide up to 8 db. forward gain over a reference dipole and will offer 25 db. front-to-back ratio. The TA-33-JR will handle up to 300 watts input to the final amplifier at 100% amplitude modulation.

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SIDEBAND FROM THE START*

BY "VOX"

WHY S.S.B. AT ALL?

EVERYONE using the Amateur bands these days is conscious of an intruder breathing down his neck. Some regard it with suspicion, some with a sensation akin to fear, while some merely see in it the pattern of the future. This intruder, of course, is sideband transmission—to some the symbol of the sect that cry "Abolish the Carrier," and to others little more than another objectionable form of QRM.

Face the facts! They are there for everyone to see and understand, and we will try to sort them out and present them in a palatable way, mostly with the newcomer in mind.

First of all, we boldly project the neck into the cruel world and state that sideband is eventually going to sweep other methods of phone transmission off the bands—and good luck to it. Secondly, we state categorically that nothing but good can come of this eventual result, so you had all better get well-informed on sideband matters right away. At present the ill-informed (and uninformed) are a pretty strong body, and their objections to s.s.b. transmission are mostly based on ignorance or misunderstanding.

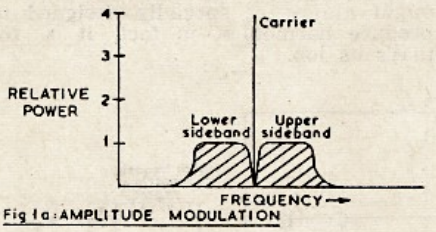

Fig 1a: AMPLITUDE MODULATION

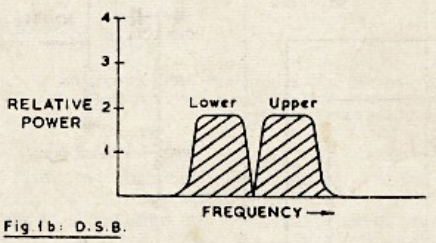

Fig 1b: D.S.B.

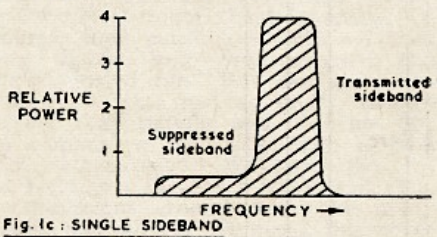

Fig. 1c: SINGLE SIDEBAND

Note: All diagrams drawn to same scale.

Comparing a.m., d.s.b. (carrier suppressed), and s.s.b. under relative power conditions. From the transmitter end, about 6 db. more talk-power is obtained with s.s.b. than from a.m. when similarly rated transmitters are used. As explained in the text, s.s.b. has many other advantages as well.

* Reprinted from "The Short Wave Magazine," December 1960.

● In view of the correspondence in "A.R.," the following article is printed. It provides another viewpoint from overseas and may assist readers.—Ed.

HOW A.M. WORKS

Strangely, but truly, there is nearly as much misapprehension about the way amplitude modulation works as there is about s.s.b.! One still meets many people who honestly do think that the carrier-wave of an a.m. transmission is constantly bobbing up and down in amplitude, in sympathy with the waveform of the audio supplied from the modulator. And they quote the classic "envelope" diagrams to prove their point. The fact is, of course, that if you looked at the central region of an a.m. transmission with a scope and a sufficiently selective receiver, you would soon prove to yourself that nothing of the kind is happening. The function of the audio, as applied to the p.a. through the modulator, is to beat with the carrier frequency and therefore to produce side frequencies (or sidebands) on either side of it.

Modulate a 150 watt carrier with 75 watts of pure tone. Put the carrier on 3800 Kc. and modulate it with a pure tone of 1 Kc. Everything being technically perfect, the result of this would be that you are transmitting three separate signals—the original carrier, with its amplitude unchanged, on 3800; and smaller signals, also pure c.w., on 3801 and 3799 Kc. The original carrier is **not** bobbing up and down in amplitude at a frequency of 1 Kc., so get rid of that misapprehension once and for all. But one of the functions of your receiver is to combine these three signals (or, at any rate, two of them) so that the beat between them produces the desired 1 Kc. tone in the headphones. The waveform after the detector **will** look like the classic "envelope" picture—but that is not at all what the carrier-wave itself looks like.

Having cleared this one, we can see that the only function served by the carrier-wave is to provide a signal that will beat with the "intelligence" (in this case our 1 Kc. tone) and make it possible for the receiver to re-create (resolve, detect or demodulate) that intelligence. The carrier-wave, therefore, does not "carry" anything; that term is a relic from the old days when no one understood very clearly what it was all about.

ECONOMY MEASURES

We are beginning to arrive at the fact that the carrier is an unnecessary encumbrance and an awful waste of power. Further proof? Read on.

Suppose, in the example we have just taken, that the only intelligence it was desired to transmit was this 1 Kc. note. In order to transmit it we have used a conventional a.m. transmitter and a conventional receiver, and there it is, reproduced just as sent. Now, any c.w. man could have told us that we were wasting time and power. You can transmit that vital 1 Kc. note merely by using an unmodulated transmitter putting out a continuous signal on 3800 Kc., provided that you use a b.f.o. at the receiving end. Set the b.f.o. precisely 1 Kc. off the receiver's i.f., tune in the signal accurately and there is your "intelligence." Instead of transmitting a so-called "carrier" and two sidebands, we have just transmitted a single signal (which we will no longer call a "carrier" since it manifestly has nothing to carry).

The important point to note in this little example is that the full power

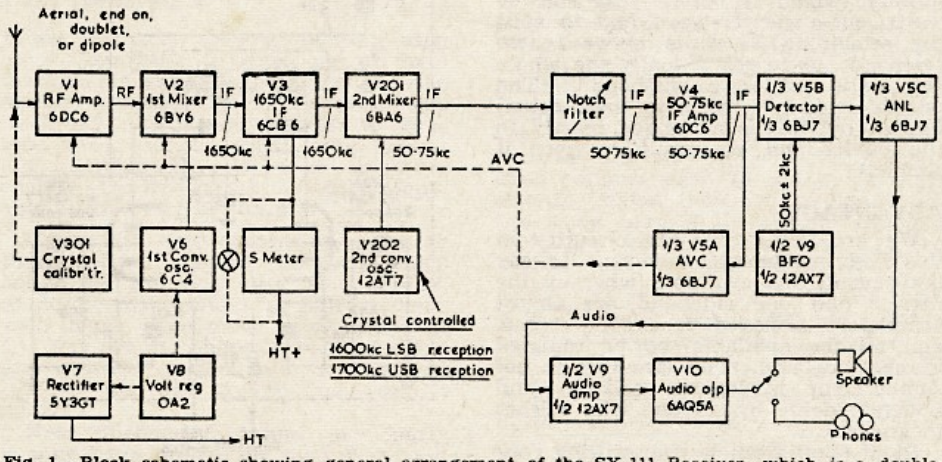

Fig. 1.—Block schematic showing general arrangement of the SX-111 Receiver, which is a double-conversion superhet., with a crystal-controlled second oscillator giving a final i.f. of 50.75 Kc. With a first i.f. of 1650 Kc., and selectable oscillators of 1600 Kc. (l.s.b.) and 1700 Kc. (u.s.b.), the 50.75 Kc. resultant is fed through a notch filter which moves the notch (maximum attenuation point) through the i.f. selectivity curve; this enables maximum suppression of an interfering heterodyne to be obtained with minimum distortion of the desired signal; the notch filter has a range of 4 Kc. across the i.f. selectivity curve. The crystal calibrator enables check points to be obtained at the band-edges and at each 100 Kc. mark on the tuning scale; a small variable capacity adjusts the first oscillator frequency for exact scale reading. When listening to a.m. phone, either sideband can be selected, which considerably improves the apparent selectivity. The electrical design of the receiver, and the variables under panel control, make it particularly effective for c.w. working.

of the transmitter is now devoted to transmitting the actual **intelligence** to the receiver. The next step is purely one of imagination. Regard that transmission as if it were not an ordinary c.w. signal with the key held down, but the output of an s.s.b. transmitter modulated by a 1 Kc. tone. (There is no difference, of course. The output of such a transmitter, running at 3800 Kc. and modulated by 1 Kc., and transmitting the lower sideband only, would be identical with a c.w. signal on 3799 Kc.)

Your receiver, by use of the b.f.o., converts this single sideband into an audio signal identical with the modulation being applied to the s.s.b. transmitter. What was previously achieved by a "carrier-wave" and two sidebands has now been achieved by one single sideband, **into which all the transmitted power can be steered.**

In case there are those who still can't see that an s.s.b. signal from a transmitter modulated by pure tone is purely and simply a c.w. signal, let it be pointed out that many sideband operators produce c.w. by keying an audio oscillator fed into their modulator, and **not** by inserting a carrier and then keying the p.a. or an earlier stage.

This makes it easy to take in the next step. Instead of feeding this oscillator into the modulator of the s.s.b. transmitter, feed voice frequencies from a microphone and speech amplifier. The sideband will now become a complex group of sidebands, their frequencies differing from that of the non-existent carrier by the instantaneous speech frequencies being transmitted. Deal with this suitably at the receiving end (by supplying a "carrier" by b.f.o. or other means) and you will have your intelligence fully and faithfully reproduced.

In short—why use a large portion of your 150 watts in generating a "carrier-wave" that doesn't really carry anything, when the same object can be achieved at the receiver end with a very few milliwatts, or even microwatts?

If you are radiating 100 watts (which you should do with a 150 watt transmitter), which is better—to spend 66 watts on a carrier-wave and to split the remaining 34 watts between two sidebands, or to get virtually the whole 100 watts into one sideband? (The purists could pick holes in these actual figures, but this is addressed mostly to the novice and we want to keep it simple.)

ADVANTAGES

We are not going into circuitry in this first instalment. Sufficient to say that means are available whereby the carrier and one sideband are almost completely removed from the scene, and all the available power radiated in one sideband. The circuitry is not simple, but is logical, reliable and understandable by anyone who wishes to grasp it.

Right—you are now transmitting your intelligence with 100 watts behind it instead of 25 or less. Result, 6 db. gain at the receiving end. To this you can add roughly another 3 db. for the receiver itself, since it can be operated at half the bandwidth required for taking in both sidebands, as in the case of an a.m. signal. Advantage number one, then—9 db. gain over an a.m. transmission. (This one produces interminable arguments, which we will deal with later—if we have to!)‡

Next, consider the modulation equipment in an a.m. transmitter. The anode voltage of the p.a. must be doubled on modulation peaks, if you are modulating it 100%. All components (including, of course, the p.a. valve) must be chosen with this requirement in view. Modulation transformers are expensive, heavy and space-wasting. Power-packs are notorious hogs of power, transformer and rectifier efficiency being what they are.

Much of the most bulky and wasteful part of an a.m. transmitter can be dispensed with when we change to s.s.b. Modulation is carried out at a low level. Power requirements are modest, since there is no datum line on which severe peaks are superimposed (the "datum line" in this case is zero). The valves and power-pack are only being pushed during actual peaks of speech transmission. Advantage number two, then—considerable economy in valves, components and space. (For a given input the power-pack for a sideband transmitter will probably be less than half the size of that required for a.m. equipment.)

NO PHASE DISTORTION

One of the irritations of a.m. phone working (particularly on DX) is phase distortion, or selective fading, which can render a transmission almost unintelligible under certain circumstances. These effects usually occur after dark, but can also happen over "awkward" skip distances at almost any time. They are due simply to the fact that every a.m. transmission consists of three separate signals—the carrier and the two groups of sidebands—all of which have to be received as sent out. If the carrier happens to arrive by more than one path (which often happens) the two received components may be shifting in relative phase and may easily cancel out at a given instant. This leaves the sidebands to fend for themselves at times, while at many other times the carrier is down in amplitude, which produces the effect of over-modulation. The nett result is severe distortion.

No such effect with our s.s.b. transmission! At times when a.m. phone is almost impossible to copy at all, you will hear s.s.b., over a similar path, crisp and clear with even the fading hardly noticeable. Advantage number three—and a worthwhile one for phone operators busy on the DX bands.

T.V.I.?

T.v.i. troubles are minimised when a well-designed s.s.b. transmitter is used—not so much because of the mode of transmission as because of the actual design of the transmitter. A hard-driven Class C stage is the prime source of t.v.i. owing to its inherent tendency to spit powerful harmonics in all directions. Likewise, the chain of frequency multipliers so often used to drive it might almost be specially designed to produce harmonics—in fact, it **is**, for that's its job.

‡ The 3 db. bandwidth advantage is very debatable.—Ed. "A.R."

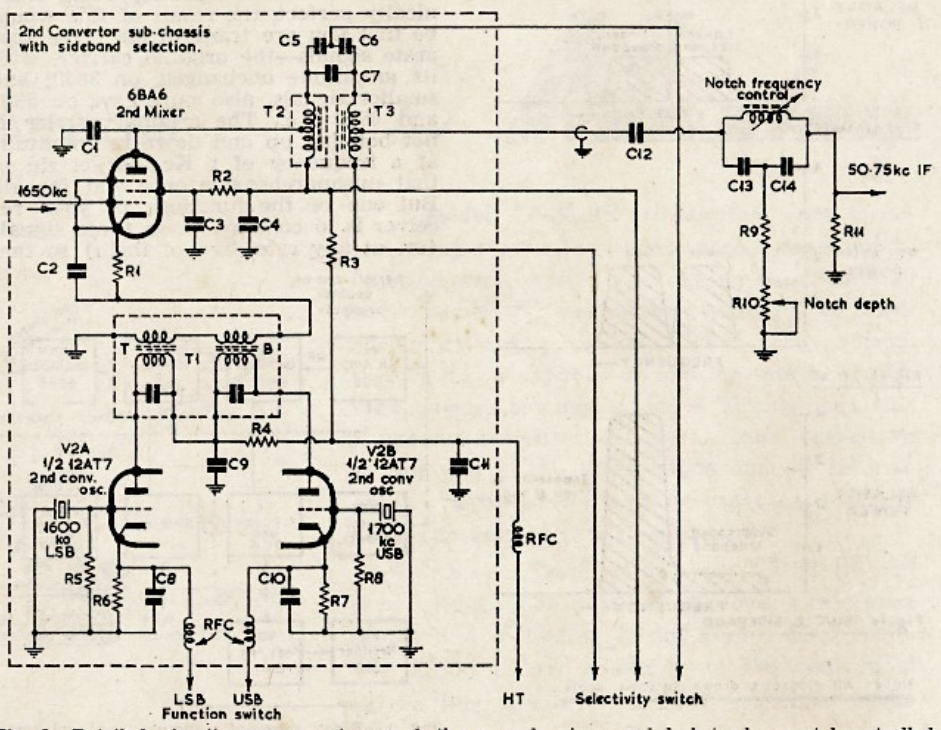

Fig. 2.—Detailed circuit arrangement around the second mixer and l.s.b./u.s.b. crystal-controlled oscillators in the Hallicrafters SX-111—and see Fig. 1. All values are given below, but it should be noted that T1, T2, T3 are factory-made items. The selectivity positions are 0.5, 1, 2, 3 and 5 Kc., the 2 or 3 Kc. settings being most suitable for s.s.b. reception.

C1—100 pF.
C2 C3, C4, C11—0.02 µF.
C5, C6—390 pF.
C7—2.2 pF.
C8, C9, C10—0.01 µF.
C12—180 pF.
C13, C14—0.0075 µF.
R1—2,200 ohms.
R2—120,000 ohms.
R3—22,000 ohms.
R4, R5, R6, R7, R8—100,000 ohms.
R9—8,200 ohms.
R10—5,000 ohms.
R11—1 megohm.
T1—1.6-1.7 Mc.transformer.
T2, T3—50.75 Kc. i.f. transformer.
X1—1600 Kc. crystal.
X2—1700 Kc. crystal.

The sideband transmitter uses neither frequency multipliers nor Class C stages, since **linearity** is the prime requirement throughout. The v.f.o. is made to beat with fixed-frequency oscillators in order to give the final output frequency; and the final stages are usually linear Class B or AB2. From personal experience, the writer has found that a 150 watt sideband rig, working on c.w., produces no interference on a t.v. set which is normally almost blown to bits by a well-known commercial a.m. transmitter with a high reputation for immunity from t.v.i. And this in a fringe area with a pretty weak signal on Channel 1.

Any t.v.i. caused by a sideband rig is usually due to front-end saturation of the t.v. receiver, since the peak power radiated by the transmitter can be very high and can cause instantaneous "splashes" of great amplitude. This type of t.v.i. can only be treated by fitting a high-pass filter to the t.v. set and, if necessary, screening the i.f's. But it is far less difficult to deal with than the business of a harmonic on 42 Mc. which gets into the set along with the t.v. signal and cannot be separated out. Advantage number four—a reasonable chance of far less t.v.i. trouble.

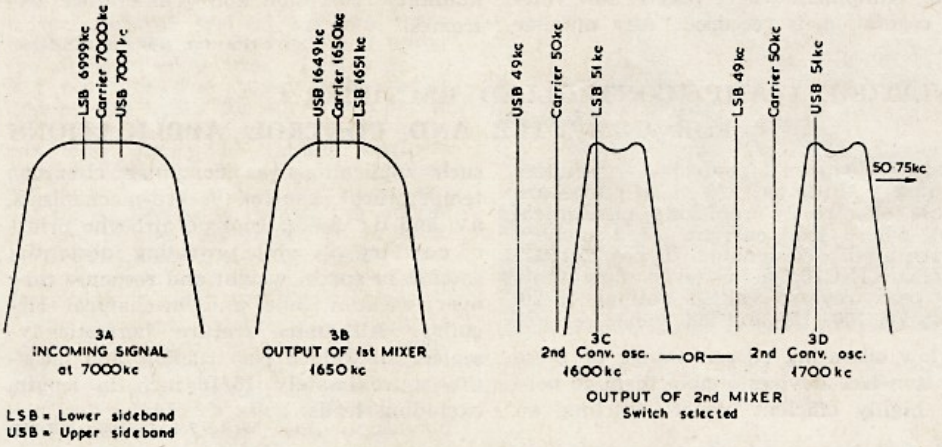

Fig. 3.—Derivation of the upper (or lower) sideband in the SX-111, with a signal incoming at 7000 Kc. taken as the example. This diagram should be read with Figs. 1 and 2, Figs. 3C and 3D above corresponding to V2A and V2B in Fig. 2.

ON THE BANDS

Now we come to the raging controversy of whether sideband signals cause less interference in the Amateur bands than a.m. transmissions. Well, there's not the least doubt about it, really. Of course, they cause less QRM—if they are signals from well-designed and well-adjusted rigs. But bad s.s.b. signals can cause just as much damage as bad a.m. signals, and it is not fair to compare a bad s.s.b. with a good a.m. transmission. We have the impression that there are fewer bad s.s.b. transmissions around than the many faulty a.m. efforts one hears, but never mind that one for the moment.

The main trouble, we are convinced, is lack of know-how at the receiving end. Many operators will always listen to a.m. phone with the front end of the receiver wide open, so as to make maximum use of the a.v.c., and with the selectivity control also as flat as possible, for intelligibility. Under these conditions, a sideband signal on a closely-adjacent channel may well cause "splatter" of some sort, since its high peaks will beat the receiver's a.v.c. to it and will hit the thing at full gain. There's no carrier there to take hold of the a.v.c. voltage!

When you hear what is apparently splatter from a nearby sideband signal, turn down the r.f. gain, increase the selectivity, and nine times out of ten you will find that it isn't there at all.

Incidentally, the sideband operator has to become accustomed to this technique of listening—r.f. gain well back, plenty of selectivity and no a.v.c., and, of course, the b.f.o. on. Now, the interesting thing is that he will usually leave the receiver in this condition when listening to a.m. phone (yes—some s.s.b. men still do listen to a.m.!), and he finds readability improved in consequence! Furthermore, the effects of phone distortion can almost be removed by this means—leave the b.f.o. on, tune to zero-beat with the phone station's carrier, and listen on one sideband (which you can do on most modern receivers). If you have never tried this, a surprise awaits you.

So the sideband transmission must cause less interference, simply because you can park ten or more of them alongside each other and there will be no whistles between the lot of them. When two a.m. phones overlap each other, you have to copy one of them through the steady heterodyne and the monkey-chatter. With sideband you have only the monkey-chatter to contend with, and it's pretty easy to sort out intelligible speech from monkey-chatter—the human ear is highly adaptable to this sort of thing.

If you still need convincing, listen to the sideband stations between 14300 and 14350 Kc. at a busy time of day; spend twenty minutes or half an hour with them. Then move down the band and sort out the phone in the "squeaks-and-whistles" region, and see how you like it. We will say no more—try it yourself.

New sideband operators, particularly if they have built their own gear, will sometimes start up with a bad transmission due to excessive audio, insufficient carrier suppression and also poor suppression of the unwanted sideband. Under these conditions, their transmission will leave something to be desired, and can cause some interference to adjacent channels. The habitual operators on the band are not slow to tell them so! On the very morning of writing this we listened to an HB9 patiently explaining to a UP2 that he must turn his audio gain down—and down—and still more down. The UP2 was left with an almost perfect transmission—and one of far greater readability than he achieved by trying to screw things up too far. This, up to now, is a splendid characteristic of the sideband fraternity—they do tend to be perfectionists and they will not tolerate nasty transmissions in their midst.

DISADVANTAGES

We have to be fair, of course, and we are prepared to fall over backwards to find and state the disadvantages of s.s.b. as a mode of operation. (Though they may be classified as disadvantages, there will be many who won't agree that they are anything of the sort.)

The first is the relative complexity of the gear, as far as circuitry goes. The removal of the carrier and the unwanted sideband involves very good filtering, unless you use the phasing method, which also has its difficulties.

Transmitter stability must be good—not necessarily better than that of a really good a.m. or c.w. transmitter, but certainly better than the average. The power supplies must be "hard" as regards regulation and stability.

At the receiving end the technique may be a little difficult at first; and if you haven't a really good receiver, then you will have to build or buy one, or carry out fairly extensive mods. on the one you've got.

In short, to be a successful sideband operator one can probably say with fairness that your standard of technical know-how has got to be somewhat higher than the average.

We quote these as disadvantages, but surely this is nonsense—aren't they really advantages? To have stability and good regulation forced upon you—well, you should really have had them all the time, whatever mode you have been using! At the receiving end, if it takes s.s.b. to show you that your receiver wasn't all that hot—surely that is something to be grateful for? And to be forced to read up the subject may bring you in contact with some fundamental truths that you were not sufficiently familiar with in the first place.

And now we present a puzzle: Several DX enthusiasts have asked, from time to time, how it is that DX sideband stations seem to put in an even stronger signal than c.w. stations from the same part of the world, although they are certainly not using more power, and probably less. The only answer we can think of (and we hope it is the right one) is that the average sideband man will take a little more trouble over his whole station, and will probably have a properly-loaded transmitter, a properly-matched aerial system, and so on. [Underlining ours.—Ed. "A.R."]

Many of the keen c.w. men of many years ago can now be found on the s.s.b. sections of the bands, and they are the ones whose signals are outpointing the newer c.w. stations—and some of the established phone-only

(Continued on Page 13)

NEW DEVELOPMENTS
from International Rectifier Corp.
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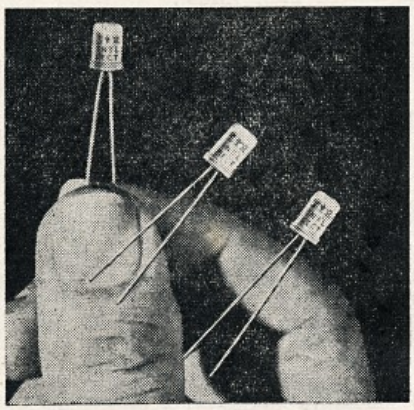
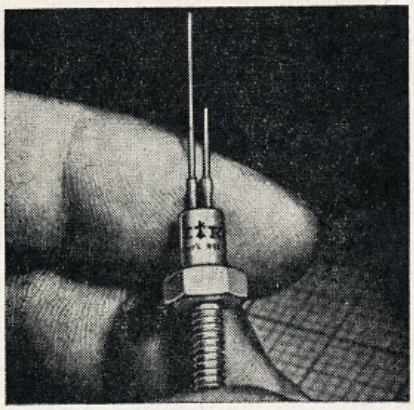


MINIATURE 1N429 ZENER REFERENCE ELEMENT PROVIDES ±1% STABILITY FROM —55°C. TO +100°C.

Hermetically sealed 1N429 silicon zener reference elements for military and civilian land, sea and airborne power supplies will provide voltage stability of ±1% or better over the temperature range from —55°C. to+100°C. The 1N429 has a low 6.2 volt operating voltage (in contrast to the high starting level of gas tube regulators), making it highly suitable for precision instrumentation, computer and other data processing equipment where precise low voltage regulation is required. Any number of 1N429 diodes may be used in series to obtain higher voltage reference levels.

Rated at 200 mW. power dissipation at 25°C., the 1N429 has a maximum dynamic impedance of 20 ohms at 7.5 mA., and a power derating factor of 1 milliwatt/°C. Units measure 0.330" x 0.230" (dia.) maximum, and feature an hermetically sealed, all welded case for optimum resistance to humidity, corrosion and temperature extremes.

Write for Bulletin XSR-256.

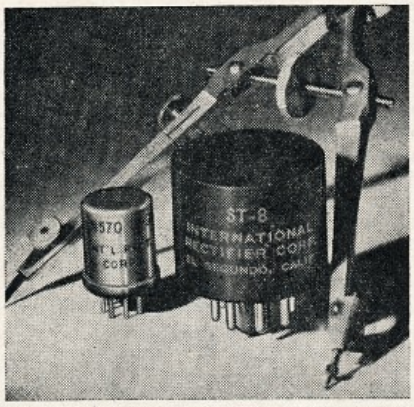


MINIATURE 1 AMP. CONTROLLED RECTIFIER FOR COMPUTER AND CONTROL APPLICATIONS

Miniature silicon controlled rectifiers weighing as little as 1/10 of an ounce are capable of directly replacing mechanical relays where load currents of 1 ampere are required. Designated Types X1RC2 through X1RC20, these seven new units have peak reverse voltage ratings of 20, 30, 50, 70, 100, 150 and 200 volts.

The low operating current range of these thyratron-like devices enable them to perform highly efficient power switching on such applications as computer circuitry, temperature control, servo-mechanisms, a.c. and d.c. motor control, airborne printed circuitry . . . while providing substantial savings in space, weight and response time over vacuum tube and mechanical circuitry. All units feature hermetically-sealed, all-welded construction, and measure approximately 15/16 inch in length, excluding leads.

Write for Bulletin SR-353.



MINIATURE HIGH VOLTAGE SILICON RECTIFIERS REPLACE TUBE TYPES OZ4, 6X5, 6X4, 12X4

Two new high voltage silicon plug-in rectifiers equipped with tube bases allow direct replacement of electronic tube types 6X4, 12X4, OZ4 and 6X5.

Rated at 1,250 volts peak reverse voltage at 80 mA. d.c. output, the ST-8 rectifier is designed to replace vacuum tube types OZ4 and 6X5, while providing better surge current capabilities, less noise characteristics and high temperature operation on vibrator-type power supply applications such as auto radios, military and commercial portable radios, and other communication systems. Units have an operating temperature range from —65°C. to +75°C., and measure 1.10" x 1.40" (dia.).

The miniature 1N570, rated at 1,500 p.r.v. at 75 mA. d.c. output is designed to replace MIL types 6X4 and 12X4 vacuum tubes in a wide range of power supply applications, including radio and television, test equipment, computers and related data processing equipment. The extremely compact and rugged 1N570 measures only 0.845" x 0.710" (dia.), and has an operating temperature range from —65°C. to +75°C.

Write for Bulletin SR-209B.

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NATIONAL FIELD DAYS CAN BE . . . FUN!!

FOLLOWING the good time had by all during the 1960 N.F.D., members of the Elizabeth Amateur Radio Club decided to enter again this year. We had many discussions on who, what, and where—these being held at the residence of our illustrious President, "Tubby" Vale, VK5NO.

The chaps all met at 0900 hours on a fine Saturday morning—Feb. 11—their cars loaded with rigs, bodies, chairs, spades, tents, wire, and all the necessary bits and pieces to make a Field Day. The convoy then set off for Black Top Hill (the name of which we found out afterwards!) We had obtained prior permission to use the site, providing we took adequate fire precautions—this we did by having five knapsack sprays on loan from our local E.F.S., and a special instruction to the President not to light his "straw burner" unless it rained! The site was well covered in long, dry grass.

Upon arrival we set up our three tents about 200 yards apart and under the shade of some trees. Last year we had only one tree stump within miles and no sky hooks for our antennae, so this year we made sure we picked a site with plenty of Mother Nature's masterpieces around. Having pitched the tents, Tubby and some helpers ran out the power leads, whilst the operators put up their antennae. There were, fortunately, no incidents during this procedure and soon the rigs were being assembled in their respective "shacks".

The first tent contained the 40 and 15 metre rig, loaned by Cyril 5DY (who was unfortunately away this weekend). It used a single 66 foot dipole and was operated by Ben 5BP and Pete 5HB (good c.w. chaps!) with occasional assistance from Ian 5QX.

The second tent contained the 80 and 20 metre rig (from 5FY with Clive 5PE's modulator). This rig used a double dipole (80 and 20 metres). The operators of this rig were 5FY and Jeff 5NQ with assistance from Don 5TM. (Did you notice, chaps, four good c.w. men as operators!!)

The third tent, known affectionately as the "palace", contained the v.h.f. rigs, one on 6 metres with a 4 element beam (from 5ZJM), and one on 1 metre with a 48 element stacked array. Ken 5ZCH was in charge of his own rig there, with plenty of assistants. The brew making equipment was also in the "Palace".

During the preparations, Tony Strong, one of our most ardent listener members, arrived in his car towing a large shrouded object—"The Donk". Where he managed to lay his hands on this beautiful 2 kva. machine we didn't enquire, it was there, every rusty piece "glistening" in the sunshine!

By noon the two h.f. rigs were rarin' to go, so with due ceremony the President, accompanied by rousing cheers, started her up—lo and behold she worked, and we had power (all 205 volts of it!) Tubby, his face wreathed in smiles, was beside himself (that looks like two 5PS Warricks, side by side, if you can imagine it!) with joy. Away went the operators and the air was full of QSOs. Tubby, meanwhile, by means known only to himself and the donk, managed to squeeze 240 volts into the cables (providing the tea jug was off!). The v.h.f. tent was now in business, and you can imagine what they heard—nowt!

After lunch, the rigs were thoroughly checked out and a few QSOs made—yes, even a v.h.f. voice was heard from Adelaide, some 15 miles away.

All the tents were well equipped; tables (?), chairs, rigs, knapsack sprays, operators and oodles of pesty flies!

The Elizabeth Radio Club's 80 and 20 metre tent at Black Top Hill (S.A.) during the 1961 National Field Day.

Our 'Onorable President—the Tub—was general factotem, tea brewer, engine topper-upper, etc. A very good job he did, too, ably assisted by Peter Field, Tony Strong, Brian Cheland, Trevor Mell, Kevin Sweeney and John Messner—all up and coming members of the Ham fraternity. Tubby's speciality, of course, is his open wire, centre fed type, incinerator, which soon after Tubby had entered any tent caused all the flies to surrender without a struggle and made the c.w. men go on phone—by George, it's potent!

The Contest duly opened at 1730 hours (S.A.S.T.) and naturally the 40 metre rig was really going strong. 80 metres was pretty dead until a couple of hours later, when it too came good. The v.h.f. department was very slack, where do all the v.h.f. chaps get to on Saturday nights?

Naturally our contest expert—the President—was rushing from tent to tent, muttering queer numbers to himself and puffing away at his D.D.T. machine. Occasionally he would make a QSO and a couple of points, and then off to the next base, leaving a cloud of smoke behind him that would make a Naval destroyer blush with envy!

The site must have looked peculiar to any passers-by that night, a generator at the side of the road seemingly supplying a solitary 25 watt lamp on an overhanging branch. A further look would disclose a conical yellow shape (the 40 metre boys), a green rectangle (80 metres), and, of course, the v.h.f. "Palace" was illuminated like a fun fair.

By the end of the first section, everyone was satisfied that a useful score had been made, and were looking forward to the 'morrow.

Ben 5BP and a few of the younger members camped overnight to look after the gear.

The Sunday section went well, and quite a number of local mobiles appeared—Ian 5QX, John 5ZJM, Clive 5PE and, of course, our well known Federal representative, Les 5AX, from Gawler. Other visitors who looked in were Hugo 5ZDA, Dave 5DS and Pop 5LD. It appeared that no matter which band the locals tuned into, 5LZ/Portable was there.

At the end of the Contest we had made a better score than last year when we operated under 5DY/P call.

In general, the Contest went well, with more portable activity than last year. Many chaps didn't know the Contest was on—where, oh, where was the Contest publicity in "A.R."?? We, like many others, had to assume that the rules were the same as last year, and were very disappointed that "A.R." made only the briefest of mentions about the forthcoming National Field Day. (So was "A.R."—Ed.)

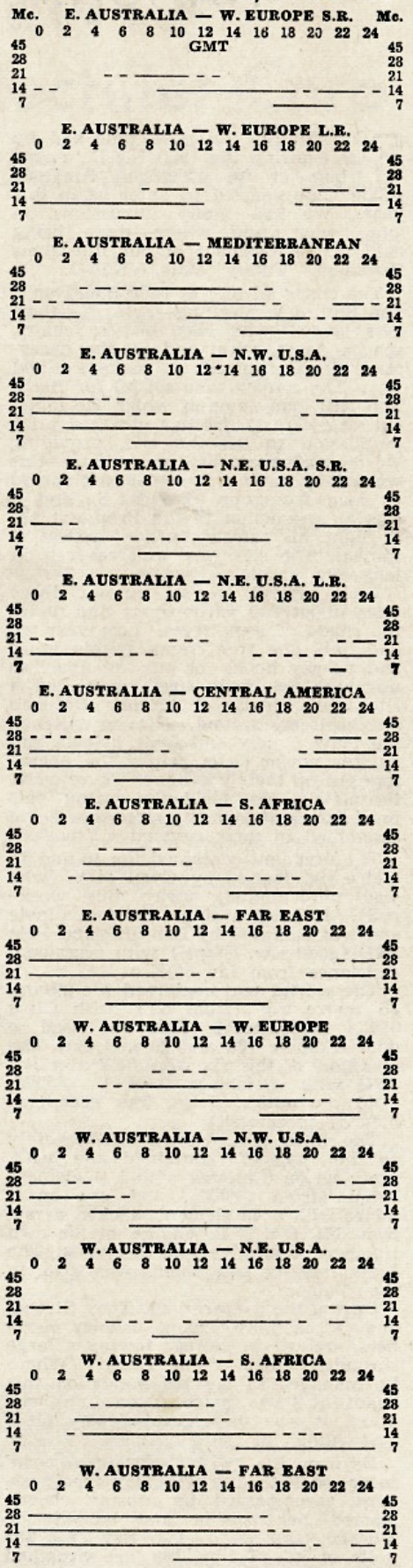
V.h.f. activity wasn't anything to rave about, some fifteen contacts only being made on 6 metres. (There must be more than fifteen v.h.f. stations in Adelaide!) One metre gave us a few contacts, so they all helped to swell the score.

We all had fun, and no accidents, or even humorous incidents, which is good for morale, but poor for news items.

See you next February, chaps, on the usual bands.

R. A. Catmur, VK5FY, Hon. Sec.,
Elizabeth Amateur Radio Club,
142 Woodford Rd., Elizabeth Nth.

PREDICTION CHART, APRIL '61

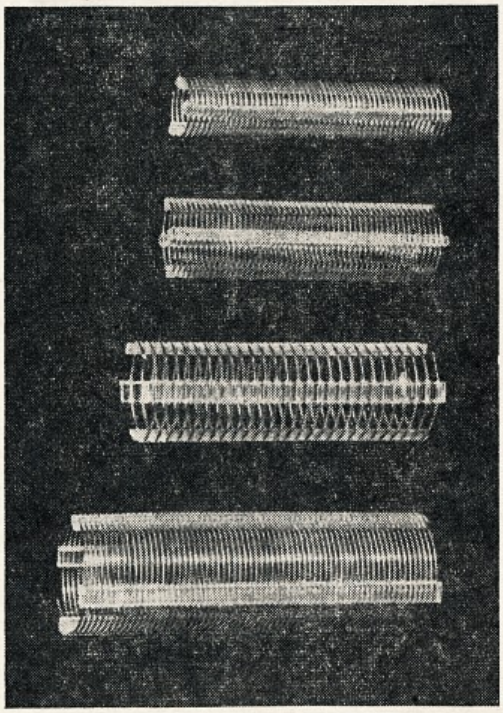


Trade Review

"WILLIS" AIR WOUND INDUCTANCES

These inductances are wound on four polystyrene pieces, so making the coil rigid yet possessing low losses. They are available in ten diameters ranging from ½" to 1¼", with winding pitches of eight and sixteen turns per inch.

On an independent check on these coils, it was found that their Q factor was not less than 250, and this improved on the smaller coils at higher frequencies. They would be particularly useful in pi output networks or for general purpose coils, in v.f.o. or transmitter applications.



Bandpass units can be made by removing a few centre turns, as can link networks be formed by using a two-turn coupling link at the end. The whole coil system being rigidly held by the polystyrene coil bars.

They are moderately priced and make available to the Australian Amateurs means of constructing a professional-looking piece of gear.

A quality job to be fully recommended.

Our sample from William Willis & Co., 428 Bourke Street, Melbourne.

PLUGS

The same supplier has a most attractive range of two and three pin male and female shielded plugs, finished in polished chrome. They are small, attractive and functional, being well suited for audio or a.c. use. They would be particularly suitable for higher priced professional or commercial applications, yet they are not expensive. Further details are available from Magraths.

A. & R. VOLTAGE DOUBLER TRANSFORMERS

These units, ranging from 80 to 190 mA. types, use two silicon rectifiers (Mullard type OA210, or International type SD94) in conjunction with two 100 μF. 200 v. electrolytic condensers in a voltage doubler circuit. This provides a lower cost power supply than the conventional full wave gas filled rectifier type of supply. In addition, the voltage regulation is superior.

At zero load the voltage doubler has an output of 340 volts, yet at 190 mA. load the voltage has dropped to only 320 volts. Thus they are particuarly suitable for Class B stages.

The unit tested was the type 2066 (320 volts output when loaded to 190 mA.). It was subjected to a 100% overload, i.e. 380 mA., for thirty minutes, at an ambient temperature of 100°F. and whilst becoming hot, it did not show any signs of distress. The maximum temperature rise is 45°C., fully loaded.

Due to the strong a.c. flux field surrounding the core, they must be kept away from other chokes or items affectetd by hum fields. In particular, they must not be mounted adjacent to tank condensers in transmitters. Otherwise they will produce an f.m. component in the output, due to their strong flux field.

Each transformer is accompanied with a circuit diagram, clearly showing the colour coding of the leads. The electrolytic condensers used in the voltage doubling circuit are special types and any recognised makes can be used..

These transformers are very well made units, with sturdy mechanical and electrical construction, both capable of withstanding much abuse.

Further details are available from A. & R. Electronic Equipment Co. Pty. Ltd., 378 St. Kilda Rd., Melbourne, and supplies are available from recognised supply houses.

TAPE DECKS

A special offer of Collaro tape decks is being made from Ham Radio Suppliers, Hawthorn, and further details can be obtained from their February advertisement on the inside front cover. Tests with one of these decks showed that they fulfill the maker's claim and as they have provision for adding an additional head to the deck, they can be made into a most versatile unit. They are possibly the best available tape deck today, and would only be surpassed by other units costing at least ten times as much. A most useful item which will amply repay the time taken to build up the associated circuitry, which then provides a complete and adequate tape recorder.

DYNAMIC MICROPHONE

Warburton Franki (359 Lonsdale St., Melbourne) have a very nice miniature dynamic mike that would be ideal for a mobile rig. The unit is about the size of a small egg and the price is very low. These units are just becoming available and from an inspection could well prove a very welcome addition to the Amateur shack. Drop a line to W.F. for further details.

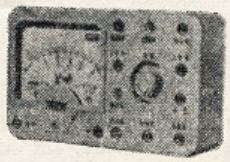
KNOBS

If you require a professional finish to your new rig then the new knob handled by J. H. Magrath, 208 Little Lonsdale St., is for you. This moulded knob of black bakelite is 1-5/16" overall dia. with an aluminium inner ring, which gives the whole unit the appearance of something from W land. A moulded brass inserted into the knob has two grub screws which positively lock onto the shaft.

This is an attractive, functional and well constructed knob, and would be one of the best yet seen on the Australian market. Write to Magrath's for further details, mentioning you saw it described in "A.R."

MINIATURE MULTIMETERS

These miniature meters feature five d.c. and a.c. voltage scales at 3K ohms/volt, with three d.c. current ranges and one ohms range. They are very well made, with a very good meter movement which is critically damped so that it rapidly approaches the reading then stops without overswing. The meter is



very useful as a modulation meter which will read the average applied a.c., in addition they are very compact and robust so can be used in mobile or field day stations.

Supplies are available from Ham Radio Suppliers, 5a Melville St., Hawthorn, Vic.

AFDR1 RECEIVER

"A.R." has been privileged to review the AFDR1 Receiver. This is a completely new concept in Amateur-type communication receivers. It is fully transistorised and operates from four heavy-duty 1.5 volt batteries.

The first r.f. stage is aperiodic tuned and covers from 500 Kc. to 60 Mc., this in turn then feeds into the first mixer which is xtal controlled from the oscillator. In turn this feeds into a counter which registers the frequency on a decade scaler, calibrated in cycles per second. Provision is made to feed the xtal oscillator into a second mixer for comparison with the in-built 1 Mc. standard, or WWV. By this means the readout frequency is accurate to better than one cycle per megacycle, e.g. the maximum error at 60 Mc. is not greater than 60 c.p.s., by correcting the local xtal oscillators this error can be further reduced.

This receiver has no dial, the received frequency being directly read from the front panel decade scaler. Thus you can set your receiver exactly on a specified frequency, or conversely state the exact drift of the receiving station. This front-end uses fifty transistors, all in the frequency counting circuitry.

Two i.f. channels are used in parallel; one is broad banded, having a bandwidth of 3.8 Kc. at —3 db., and a response at —60 db. of 7 Kc. This is

(Continued on Page 12)

Trade Review

(Continued from Page 11)

achieved through the use of xtal coupled pairs using torroidal filters, which are also used in the second channel which has a bandwidth of 200 c.p.s. for c.w. use. The overall gain through this channel provides the sensitivity of this receiver, the first r.f. stage and first mixer merely providing enough gain to override the input noise of the first mesa type transistor. By these means a sensitivity of ½ μV. for 15 db. signal to noise ratio at 3.8 Kc. bandwidth at 500 mW. output is achieved.

Two detectors are used, one a conventional type diode for a.m. and a modified product detector for c.w. and s.b. is provided. The reception of upper or lower sideband is accomplished by shifting through an a.f.c. circuit the xtal oscillator frequency by 3.8 Kc. Upon special order the supplier can provide a synchronous detector for double sideband.

Conventional audio circuitry is used after the detectors, but it is unusual to see that the a.v.c. is derived from the audio for all c.w. and s.b. reception. Conventional delayed a.v.c. being used for a.m. In keeping with the sharp i.f. selectivity, the audio channel is provided with variable selectivity. One channel is 8 Kc. wide, for a.m. reception, the next covers 4.3 and 2 Kc., and a sharply peaked section is provided for c.w. To lessen operator fatigue, this peak at 1 Kc. can be varied ±200 c.p.s.

Each band covered is selected by the appropriate xtal, and segments of 500 Kc. or 2 Mc. can be used, depending upon the xtal chosen. Front panel controls are bandchange, selectivity, broad tuning, a.m./c.w./u.s.b./l.s.b. and d.s.b., audio bandwidth, audio gain, a.v.c., and xtal standardisation.

Various accessories are available which include a pan adapter, timer, diversity plug, cathode followers, a universal power supply for use on 12 volts d.c. to 230v. a.c./d.c. with all intermediate voltages covered, a precision xtal calibrator which provides a frequency reference from WWV with the same accuracy as the latter, i.e. one part in ten million. This unit uses a one inch c.r.o. tube and compares the one second tick in a synchroscope circuit with a derived 100 c.p.s. pulse from the receiver's multivibrator. Thus after a 100 second comparison the in-built 1 Mc. xtal can be compared exactly with WWV.

The basic receiver weighs fifteen pounds, and occupies 1½ cubic feet, the front panel being 18" long, with 12" depth and 12" high. The main space being taken by the decade counter frequency globes which replace the conventional dial.

This receiver is out of this world and the local agents are to be congratulated upon importing such a unit. The price is most attractive, initial shipments being quoted at £99/19/1, plus 25% sales tax.

★

OUR COVER PICTURE

The VK3ADW/P group on Mount Blackwood. Michael VK3ZEO secures the six element two metre beam to the Trig. Point. Michael VK3ZCZ and Keith VK3YQ offer advice.

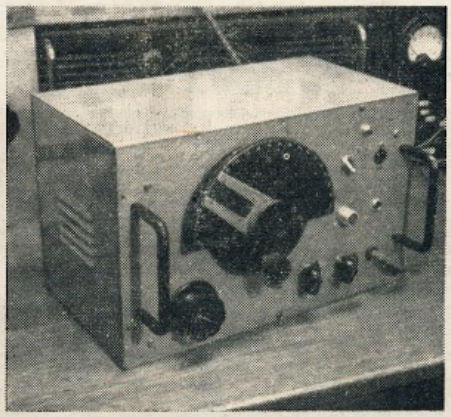
A FREQUENCY METER

(Continued from Page 3)

close to the louvred side of the case for maximum ventilation.

All leads, plugs and controls are on the front panel which is screwed to the metal case with a number of self-tapping screws. Fitted with handles and a bezel light, it is quite an attractive addition to the bench and very pleasing to the eye of certain gentlemen.

A Bendix frequency meter was used for calibration and in most cases another Amateur would be only too willing to help you out in this matter.



Where a meter is designed for large frequency coverage, calibration points are usually printed in a small book. In this case where the range is only 4/10ths of a megacycle, and taking the readings at 3.501 and the next at 3.502, the number is only 200.

Thus the dial reading can be typed against the frequency, on a single sheet of paper, taking four columns.

The crystal check point can be suitably marked and the sheet framed liked a picture.

Frequencies are very easily read and working other than 3.5 Mc., a simple multiplication is all that is needed. ●

AUSTRALIAN RADIO AMATEUR CALL BOOK

1961-62 EDITION

The new edition of the Call Book will shortly be compiled and printed. In order that it may be as accurate as possible, every Australian Amateur is requested to immediately complete page 153 of the present Call Book and send a copy to "A.R." and the P.M.G's. Department in the Licensee's State.

PLEASE DO THIS **NOW** SO THAT YOUR LISTING IN THE NEW CALL BOOK WILL BE CORRECT.

The Publications Committee also invites suggestions for improving the new edition of the Call Book. Write: Editor "A.R.," P.O. Box 36, East Melbourne, C.2, Vic.

PHUTILE PHONETICS—Flailing Fatuous Fone

By L. H. THOMAS, G6QB—DX Editor, "Short Wave Magazine"

THIS may be regarded as an Impasisoned Plea or an Angry Tirade—whichever you like. But the writer has become so exasperated with some of the gibberish heard on the Amateur phone bands that he has to let the steam off before it starts coming out of his ears.

When will some of our phone operators learn sense? There seems to be a certain proportion of them who think it clever to surround their conversation with unnecessary verbiage and extraneous nonsense by using so-called "phonetics" in the most unnecessary circumstances.

We have always winced and gone slightly green at "Q R Mary," whoever she might be, but now it's "Q R Morocco" or even "Queen Roger Madagascar," and if anyone can see the necessity for spouting that lot on an overcrowded band, then we are extra dim. "QRM" is fine for the c.w. operator; as it stands, it's tolerable for the phone man; but "jamming" or "interference" would be better. (Yes, yes, we know . . . you use the Q Code because it's international and overcomes the language difficulty. That's why two G's working each other talk about "Queen Roger Morocco"!) For goodness' sake let us grow up and talk an intelligible language—and down the drain with all Q-signals rolled off to sound clever. Don't try to tell us that "Your sigs are fading" is not more intelligible, even to a Uruguayan or a Latvian, than "You have some Queen Sugar Baltimore on you".

"I SPELL"

A recurring nightmare is to work a station whom you have already given Readability 5, Strength 9, who then tells you his name is Nebuchadnezzar (which you naturally get first time—otherwise he wouldn't be 5 and 9, would he?) and then adds the dread words "I Spell". You know what's coming; even if it were "N . . .e . . . b . . . u . . ." and so on it would be bearable, but it has to be "N for Norway, E for England, B for Boston" and right through the ghastly lot, followed, no doubt, by "I repeat". To those persistently driven up the wall by this kind of nonsense, we say, "Hit back! Invent your own alphabet, and let 'em have it."

We tried it once, with devastating results. As far as we remember, the reply went "The name is Freddy—I spell—F for Fear, R for Rear, E for Ear, D for Dear, D for Dear, Y for Year." Invent a better name than that, though, so that you can introduce "Q for Queer, C for Clear, L for Leer, M for Mere, N for Near" and many others. You can, with luck, deal with your own call sign in the same way and become Gear Three Peer Dear Queer—or something near. Almost as good for exploration is the Bog family, enabling you to become Gog Three Tog Dog Wog, or thereabouts.

FOREIGN PARTS

The really shocking thing is the use of place names, of all things, for phonetics. No wonder the newly interested S.w.l's. and the eavesdropping B.c.l's. think they have wonderful receivers . . . they hear Mexico, Germany and Canada all at once! Believe it or not, but we actually did hear a G station a few weeks ago declaiming thus: "CQ, CQ, CQ, this is Germany . . ." Cut him off there and there's only one interpretation. Of course it wasn't Germany at all, but only old G3 so-and-so; but of all the words to choose for "G" we can hardly think of one less suitable.

So we must tell all the listeners that when they hear Canada Ontario they are listening to Cuba; that Denmark London means Germany; that Yokohama Ontario is really in Roumania; and so on ad nauseam. Could it be more confusing and unnecessary?

Listening round the s.s.b. section of 20 one night we heard a weak station who was probably a good DX piece. But every time he signed he used long-winded phonetics and spoke so quickly that it was literally impossible to get his prefix. We finally switched off and never did gather who that man was. If he had spoken his call sign, as it appears on his license, just once, we should have got it. This is what we mean by the real futility of the so-called phonetics.

BE FASHIONABLE

Enough of destructive criticism! We offer a new phonetic alphabet which will put you right in the swim, among the Top People. Use only this one (it washes whiter than all the others) and you will stand right out on the band as something different (a moron, probably). But that's the thing—**Be Different**. Be a Beatnik if you like, but use our phonetics.

A for Able
B for Babel
C for Cable
D for Dear
E for Ear
F for Fable
G for Gable
H for Hear
I for Ipecacuanha ("I Spell")
J for Jeer
K for Khatchaturian
L for Label
M for Mabel
N for Near
O for Oesophagus ("I Spell")
P for Peer
Q for Queer
R for Rear
S for Sable
T for Table
U for Unintelligibility
V for Veer
W for Weir
X for Xylophone
Y for Year
Zee for Zed.

Good luck to you all and may you dodge the Queer Rear Near, nor ever suffer from Queer Sable Babel. (I will even send you my Queer Sable Label.) The name, of course, is Mabel Able Cable and the QTH Llanfairpwllgwyllgogerychwyrndrobwllllantysiliogogogoch . . . I spell! (No, you definitely don't—Ed.)

Up the wall, everybody!

— . . . —

SIDEBAND FROM THE START

(Continued from Page 7)

s.s.b. types, too. This is not a general rule, of course, and there are plenty of weak sideband signals to be heard when their c.w. counterparts are coming in more strongly. However, it's more often the other way round.

SUMMARY

Summing up the contents of this little lecture, then, we had better state briefly the advantages and disadvantages of an s.s.b. conversion at your station. In its favour are the following factors:

(a) Up to 9 db. gain over a.m.—say two S points—with same power;
(b) Equipment is less bulky and uses less mains power;
(c) No phase-distortion or selective fading;
(d) Less t.v.i. trouble;
(e) Abolition of carrier-wave heterodyne interference.

Against it, if you like to consider these points as disadvantages:

(1) Increased complexity and expense of gear;
(2) Increased difficulty of operation, in the early stages;
(3) Necessity for better receivers;
(4) Rather more technical know-how necessary, or desirable.

Sort these points out for yourself and decide whether the whole business is a fad or a reality; and then, whatever your own decision, ask yourself whether you really believe that sideband is going to advance or retreat. There's not much doubt about the answer to that one. Sideband is a mode we are all going to have to live with, and those that get in early are going to be those who have most of the fun. Make up your mind whether your motto is going to be "Help Stamp Out Carriers."

(To be continued)

SIDEBAND

Bud Pounsett, VK2AQJ
22 Seiffert Centre,
Queanbeyan, N.S.W.

NATIONAL FIELD DAY

Although I was unable to spend much time in the contest and worked but eight portable stations in about 45 minutes, it was very pleasing to find that not once was I answered with that familiar reply of previous years, "Sorry, OM, I can't receive s.b. with this receiver." How about some portable sideband stations in next year's contest, chaps? It is certainly worth some thought.

THE FINAL POWER SUPPLY

From the January issue of the "Sidebander," the magazine of the Single Sideband Amateur Radio Association, comes some interesting information you may wish to apply to your final amplifier power supply. This is the conclusion to a series of articles on linear amplifiers written by John Henly, W1EOR.

"The linear presents problems that are peculiar to its breed and power supplies must be designed to provide adequate regulated voltages to handle the difficult load requirements. The load current swings from a low level to some higher level at a syllabic rate. During this swing, the plate voltage must stay close to its value at the low current level if the amplifier is to be linear. For this reason, power supplies that are 'stiff' or have good dynamic regulation, should be used in linear service.

"One of the easiest ways to secure a 'stiff' supply is to use a swinging choke input with the largest output capacitor (in micro-farads) that you can find and economically utilise. At voltage levels up to 2,000 volts, electrolytic capacitors in a series parallel arrangement, each shunted by a 100K ohm, 1 watt resistor to prevent the possibility of an unequal voltage distribution across the filter string, will be an economical source of filtering. Another important feature of a 'stiff' supply is the bleeder resistor which will load the circuit keeping the no-load voltage from rising to a high level which would drop when a sudden load was applied. This fluctuation expressed in percentage form is the regulation of the power supply.

"Regulation in percent. equals (E out No Load minus E out Full Load) divided by E out Full Load, multiplied by 100.

"A good stiff supply has better than 10 per cent. regulation or, in other words, less than a 10 per cent. change in voltage between no load to full load current.

"The high current bleeder may not be needed in a linear amplifier for it is possible to use the idling current through the tube to provide the necessary no load current on the supply. A protective bleeder which will draw at least ten mils. should be included for safety even though the final tube idling current is used in place of the bleeder.

"The current rating of the power transformer used for a linear need not be capable of handling the peak current drawn by the amplifier if a large capacitor is used at the output of the filter. A rating of one-quarter of the peak current will be in most cases sufficient if the output capacitor of your filter is large enough to solve the following equation:

"C (mfd.) equals 400,000 divided by Zpp, where Zpp equals E (power supply volts) divided by Ip (peak plate current). The peak plate current is the calculated peak current, not the top of your plate meter swing. The amount of capacity needed for a reduction in output capability of the power transformer may be calculated using this general formula at any voltage as long as the peak current is known. This is a simplified 'rule of thumb' formula, but will hold for most commercial transformers presently on the market.

"Utilisation of bridge type rectifiers becomes very practical at all levels. Smaller rectifiers such as the 816 or similar mercury vapor tubes can be used successfully in these bridge circuits. By reducing the size of the unit's power supply components a desk top kilowatt rig is realised."

For those of you who may not know of the S.S.B.A.R.A., it is an Association with headquarters in New York and members all over the world. If you would like a sample copy of the "Sidebander," let me know and I will be pleased to send one along. The S.S.B.A.R.A. is an organisation of licensed Amateurs dedicated to furthering s.s.b.

ARS5A

In the Jan. issue, mention was made of the ARS5 and ARS5A sideband generators available from Don Haberecht, VK2RS, of Albury. This month we have the circuit which Don suggests could follow the ARS5A unit which has low level output on 80 to 10 metres.

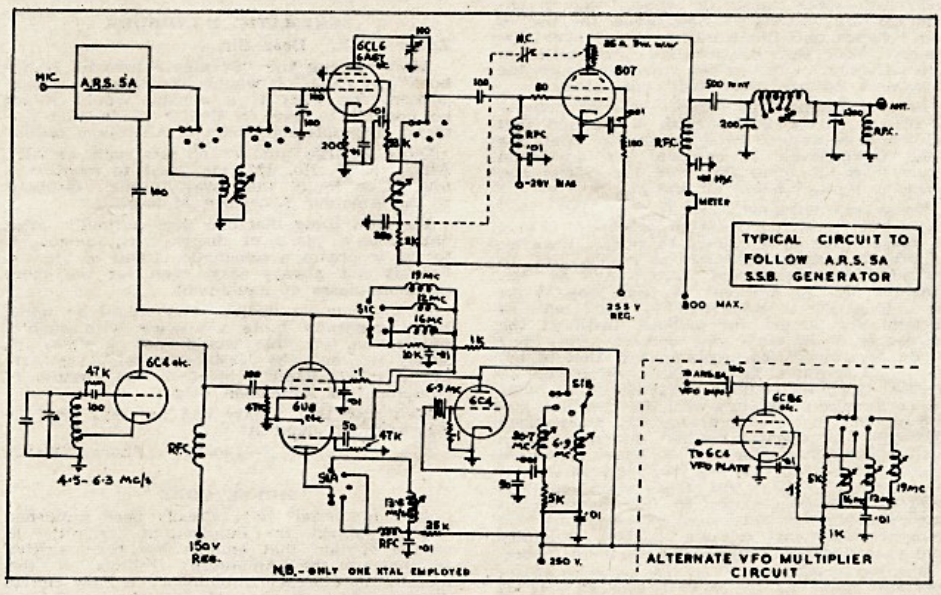
The way in which output is obtained on the various bands is rather ingenious and will be of interest to all users of 9 Mc. sideband generators. As will be seen from the circuit, the 6U8 tube is used as an untuned buffer between the v.f.o. and the ARS5A mixer (a 6BE6) on 80 and 20 metres, but on 40, 15 and 10 metres, the 6U8 is a mixer. The 6.9 Mc. crystal oscillator signal beats against the v.f.o. signal to produce the required injection frequency at the ARS5A. This dodges the rather undesirable practice of doubling and tripling the frequency of the v.f.o.

For 80 and 20 metre operation a 9 Mc. xtal oscillator signal is heterodyned against the 5.3 Mc. s.b. signal and for 40 metres the second harmonic of a 6.2 Mc. xtal oscillator is used. This latter mixing occurs in a separate chassis to the exciter, the exciter having low impedance output at 5.3 Mc.

S.B. S.W.L.

Again from Afton, L2136/VK4, of Atherton, North Queensland, comes a report on some interesting sideband stations heard in Feb. Afton used a quad to catch these goodies, but is in the process of erecting a Mosley TA33 beam. Here are some of the more interesting calls taken from a very imposing list:

EP4X, FL9, FL8ZA, FL7RT, LU3EQ, OD5CW, SV1AE, UA0LA, UA4FG, UB5FJ, UA3FU, W5ACN/Aero Mobile, ZS7PS—these were on 20 metres, and for 15 metres Afton heard: UA1AB, W0EZV, ZL2ASH. Seems as though North Queensland is a good place for Hams to migrate to. Watch out for local QRM, Afton.



This practice has caused many a sidebander considerable trouble trying to eliminate drift, especially on 40 metres where the v.f.o. frequency is usually tripled. This system of Don's eliminates the problem. Using only one crystal makes it very attractive. A word of warning, put the 6.9 Mc. oscillator in a shielded compartment, it has a fundamental and harmonics very close to the lower band edges. The 6CB6 stage is an alternate v.f.o. multiplier, but I prefer the v.f.o./xtal oscillator combination for stability.

VK2AQJ

Here at Queanbeyan, work is progressing on the new transmitter. The exciter section is completed and has been in use for some weeks. I was lucky enough to have a mechanical filter sent to me by K4TLB and this has been put to good use. The general design is very straight forward and attention has been paid to good layout with plenty of shielding.

The crystal oscillator uses a 12AU7 followed by a 7360 balanced modulator tube. The 7360 tube does everything that R.C.A. claim. The carrier suppression is very good and easy to adjust. An EF86 and 12AT7 take care of the audio requirements while a "sure-fire" vox circuit is used. Following the mechanical filter is a 6BA6 amplifier at 455 Kc. which was included to provide automatic load control (a.l.c.) at a later date. A 12AT7 is used as a balanced mixer to convert the 450 Kc. s.b. signal to approximately 5.3 Mc. by beating against the signal from the 6BA6 v.f.o. tube. The v.f.o. LC circuit is remoted from the exciter chassis by about 6 feet of twin coaxial cable to give adequate stability. It was found desirable to tune the plate circuit of the balanced mixer from the front panel as the use of a reasonably high Q circuit here restricted the bandwidth somewhat. Output from the exciter tended to drop off if a shift of 100 Kc. or so was made. High Q is desirable here —the unwanted frequencies being close to the wanted 5.3 Mc.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK6RU ..	2	251	VK6KW ..	4	202
VK6MK ..	43	243	VK4HR ..	12	192
VK5AB ..	45	243	VK3BZ ..	3	176
VK4FJ ..	21	221	VK3GB ..	50	171
VK3WL ..	14	211	VK4RW ..	23	164
VK3ATN	26	204	VK3EE ..	10	163

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB ..	10	287	VK4HR ..	8	218
VK3CX ..	26	275	VK3XU ..	48	213
VK4FJ ..	29	264	VK7LZ ..	17	212
VK3NC ..	19	236	VK6RU ..	18	210
VK3FH ..	15	226	VK3YL ..	39	203
VK3BZ ..	6	222	VK5RX ..	23	195

Amendment:
VK3ARX 66 137

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK2ACX	6	289	VK3BZ ..	4	231
VK4FJ ..	32	267	VK3HG ..	3	225
VK6RU ..	8	265	VK3WL ..	45	225
VK6MK ..	74	247	VK7LZ ..	23	223
VK3NC ..	77	238	VK3XU ..	61	221
VK4HR ..	7	233	VK6KW ..	13	216

New Member:
VK5NQ .. 81 102

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

ROSS HULL MEMORIAL V.H.F. CONTEST

Editor "A.R.," Dear Sir,

In the rules for the 1960/61 Ross Hull Memorial V.h.f. Contest, the reason for holding such an event was given as ". . . to perpetuate the memory of the late Ross Hull whose interest in v.h.f. did much to advance the art." Is it logical therefore to suppose that Ross Hull would desire the major VK v.h.f. contest to assist in further advancement, the art of communication at v.h.f.? I think it is. Do the present rules allow for this? I think not.

Under the existing rules, activity is increased but what is produced? Tired operators and very little else. Surely the contest should encourage the opening of new paths, the use of more bands and the working over longer distances. Very little advance has been made in this direction over the last three years on the two most densely populated v.h.f. bands.

In encouraging this "right" sort of activity I feel it should be done in a manner that allows a contestant who picks his operating time intelligently to compete on an equal basis with the more fortunate types who can spend unlimited hours on the air.

These are unrealistic ideals you say! Perhaps, but I feel we can approach more closely to these ideals by a change of rules. However, before submitting definite proposals, let us consider some pertinent facts. Are 50 Mc. and 144 Mc. so different as some say as far as propagation is concerned? I think not. In general, the longer the distance involved the harder it is to make the contact. Only one mode of propagation deviates and that is the so called sporadic E. Normally occurring on 50 Mc., it allows stations about 800 miles apart to work quite easily but with the ease decreasing as the distance figure moves away from the 800 mile mark in either direction. Such modes as T.E. scatter and F layer refraction occur occasionally on 50 Mc. and rarely, if ever, on 144 Mc., and they allow contacts over a 3,000-mile range to be covered but such contacts are not usually easy. Thus, the general statement relating contact difficulty and path distance is applicable to these modes.

Another consideration is the state of affairs brought about by current techniques. It is possible because of practicable antenna sizes and tubes available, to work somewhat greater distances with comparable ease on 144 Mc. than on other v.h.f. bands within the range 100 to 300 miles. It is my contention that these factors can be allowed for by using a scoring system based on distance of contact path rather than on the arbitrary boundary (call area) system prevailing. Such a system is possibly the most practicable and hence desirable one for h.f. contests but, in my opinion, is most unsuited to v.h.f. contest needs.

I suggest a scoring table as follows:—

Distance Between Stations	Points per Contact				
	50 Mc.	144 Mc.	288 Mc.	576 Mc.	Higher†
Over 1 and up to 10 miles	0	0	0	0	1
„ 10 „ 25 „	0	0	0	1	3
„ 25 „ 50 „	1	0	1	5	8
„ 50 „ 100 „	2	1	3	10	15
„ 100 „ 200 „	5	2	5	15	20
„ 200 „ 300 „	10	5	8	20	*
„ 300 „ 500 „	3	8	15	*	*
„ 500 „ 1000 „	1	15	*	*	*
„ 1000 „ 5000 „	5	*	*	*	*
Greater than 5000 „	10	*	*	*	*

* Points to be set down by F.C.C. when contacts over these distances are made.

† Moonbounce contacts to be evaluated by F.C.C. when made.

A possible point for criticism may arise from the Contest Committee's chore of having to check logs. The job would be made easier by making it necessary for stations to exchange the distance figure involved in the contest as well as the usual cyphers to make valid contacts. The figures so exchanged would not have to be exact as the proposed table deals in quanta of miles.

A point mentioned earlier concerns the duration of the contest. I suggest that contestants be allowed to choose their own operating period of say, one week, within the months Jan. and Feb. This allows the time-pressed operator to pick the time best suited to himself and of course those who spend long hours on the band could submit their best week of contacts.

If the table were to be used, only two transmitting sections would be necessary—open and phone only. C.w. only is not justified yet as there are no exclusive c.w. operators on v.h.f.

Finally, since I propose that bands above 300 Mc. be definitely included in the contest, I feel the name should be changed to the Ross Hull Memorial V.h.f./U.h.f. Contest.

Have "A.R." readers any comments for or against the foregoing? You may have different ideas on the figures set out in the proposed table. If the Federal Contest Committee is given sufficient time, maybe we will get new rules for the next contest. Sending ideas along in October or November helps nobody.

—David Rankin, VK3QV.

SCHEMATIC HANDBOOK

Editor "A.R." Dear Sir,

After reading the "Surplus Schematic Handbook" by "CQ," I would like to offer a suggestion, for what it is worth. Would it not be possible to have a similar publication featuring disposals equipment of Australian origin?

Quite a large number of sets such as AR7, AR8, No. 11, No. 122, etc., just to mention a few, have found their way through disposals to the Amateur fraternity at large.

The first thing that one does normally, after obtaining a piece of disposals equipment, is to try to obtain a schematic circuit of the set. This is not always easy, even for the more common pieces of equipment.

In my humble opinion you would be doing Hams generally quite a service with such a publication. If this would not be possible, surely it would be feasible to print regularly in "Amateur Radio" copies of the circuits of equipment of Australian origin.

Well now that I have had my say, what do others think about it?

—Lionel L. Sharp, VK4NS.

MORSE CODE

As many letters have already been published on this subject, the Publications Committee is of the opinion that enough has been written to indicate the Amateurs' feelings on this matter, therefore correspondence is now closed. Acknowledgment is made of the receipt of letters, in reply to VK3BG, from: J. C. Redman, VK2JE; Frank Hine, VK2QL; George Downing, VK3GD; S. J. Lloyd, VK3AST; Fred Jenkins, VK5WS; A. C. Rechner, VK5ZCR/T; Bob Elms, VK6BE; and D. Grantley, L2022/L3088.

★

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Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

☆

Manuscripts should preferably be typewritten but if handwritten please double space the writing. Drawings will be done by "A.R." staff provided that the article is illustrated.

☆

Photographs will be returned if the sender's name and address is shown on the back of each photograph submitted.

☆

Please address all articles to the

EDITOR "A.R.,"
P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

V H F

David Tanner, VK3AAU
C/o. British Nylon Spinners,
Bayswater, Victoria.

Things are apparently on the improve on the bands since the quiet period after the Ross Hull Contest. JAs have started to reappear so the new gang may find some new interests to keep them going. There has also appeared a new batch of full tickets, yours truly included, so we may possibly see some c.w. activity. We have received news of the allocation of the t.v. channels. As I have it, we keep both 6 and 2 metres unaltered, Channel 1 being 56-63 Mc. and Channel 5 in the f.m. band, and a new one—5A, 137-144 Mc. I hope to be able to confirm these from more official sources. This will probably give our v.h.f. bands a bit of a lift and give the boys an incentive to build gear which they won't have to modify later. By the way, my call sign is now VK3AAU, so you might find me snooping on the h.f. bands collecting dope and working DX.—3AAU.

NEW SOUTH WALES

General.—The V.h.f. and T.v. Group has been active as usual, with attendances at meetings down a little but still quite encouraging. The number of younger members attending is extremely good and indicates plenty of new blood to fill the bands in future years. To this end, the management committee has started the year 1961 with lectures directed at basic information—receiver and transmitter theory and practice for v.h.f., test gear, etc. Quite a deal of information has been provided including some in roneoed form. We have had several requests for this information to be made available to members who have missed the meeting, and also to country members. This suggestion is being considered by the management committee and, although it has several hitches including the cost, which someone has to bear, it is hoped that a plan can be derived to provide a loose-leaf folder to be added to at future lectures. Taking things into my own hands (this is **not** Group policy), I believe it would be a good idea if such information was exchanged between v.h.f. men all over Australia. Some comments from other V.h.f. Group scribes would be welcome. ("A.R." would be pleased to publish any articles forwarded.—Ed.)

The major coming event is the Autumn Field Day to be held on Sunday, 16th April. This year, the day will be non-competitive and will take the form of a get-together via 2 mx with the large group of active v.h.f. operators in the South West Zone. The Sydney gang will take up vantage points in the highlands of the s.w. corner, and further details will be given via the W.I.A. Broadcasts before the day.

50 Mc.—Two of our regular operators on this band, 2ZCF and 2ABR, report nil activity since the New Year openings already reported in Feb. "A.R."

144 Mc.—Several new stations have appeared, and 2ZJC is looking for contacts on 147 Mc. from Kurrajong. There has been considerable comment on press announcements of t.v. channels adjacent to and in the existing 144 Mc. band, contrary to information given earlier in the year. It is hoped that something concrete and official is announced soon.

The February night hidden tx hunt, with Barry 2ZAH as the fox, was won by Paul 2ZPJ with Neville 2ZNM second and no third. A very cunning spot only three miles from the start had the hounds well and truly lost, although at times they were only 100 yards from the transmitter.

288 Mc.—At last we are able to report signs of activity on this band, though only in the rumour stage. Bob 2ZAR hopes to have pictures soon, with a QQE06/40 as the final r.f. amplifier. The camera work is being done by John 2ZAV. Best of luck and I hope the rumours bear fruit, as this band has always been in the doldrums in VK2. These two enthusiasts are well equipped to start Amateur t.v.

576 Mc.—Best DX was the recent contact from 2ATO portable at Valley Heights to 2HO at St. Ives and 2ZAH at Lane Cove.—2ZAG.

VICTORIA

The V.h.f. Group meeting was held on Feb. 15 in the rooms with some 12 members present. Kel 3ZFQ gave a brief talk on his DX-pedition to "Alice" VK8. Discussion took place on the various aspects of QSLing, with an article to appear soon in "A.R."

After general business, David 3QV gave us an excellent discourse on computers-electronic. All present were suitably awed by the details involved and everybody appeared to have a good grasp of the subject, possibly that accounted for the lack of embarrassing questions that might have been asked later. Thanks David.

50 Mc.—Two openings during the month has saved the band from oblivion for those looking for DX. Feb. 3, at noon, VK4 and again in the evening with VK4, 2 and 5. Then again on 19th Feb. we had VK4 in for quite a time during the day from 11 a.m. until 3 p.m.

The Field Day saw quite a few stations out in the field. Those worked were 3ADW/P, at Mt. Blackwood in Bacchus Marsh, full of top brass; 3CS/P, Woody Hill, in Donnybrook; 3ZKK/P, You Yangs; 3ZJS/P, Bass Hill, in Loch, had more success here than at Korumburra; 3ASC/P, Wantirna; 3GF/P, Croydon, had no luck on Sunday at Arthur's Seat; 3ALZ/P, Mt. Ridley, were all active during the day.

144 Mc.—Two mx Field Day portable stations were located: 3ASC/P, Wantirna; 3ADW/P, Mt. Blackwood; 3CS/P, Woody Hill; 3ZCG/P, Bass Hill; 3ZDE/P, Mt. Dandenong; 3ZGG/P, Mt. Donna Buang; 3ZHT/P, Mt. McDonald; 3ABK/P, in Geelong; 3APC/P, Crib Point; 3ZEZ/P, King Lake; 3ZIW/P, Mt. Dandenong. These were supplied by 3QV.

288 Mc.—Activity has jumped on this band amongst the "non-stabilised" gang. 3ASG at Preston is active using 7193s p.p., RL18 super and 11 el. yagi, and is usually active listening from 7.30 p.m. onwards on 6 mx to arrange a contact. 3ZEC at Essendon has worked 3ASG and 3ZGP is getting started slowly after revamping some old gear. Have 955 super, 7193s p.p. and a rather inefficient 8 el. yagi and 16 el. phased array ready to try out. 3AUX at Elsternwick has had two-way on 288 with 3ASG with quite good results.

3ZBN is re-building and there are others on the way or contemplating building gear. Promises to be quite interesting a time on 288 this year. Can't say what the stabilised boys are doing but know that 3AUX has worked across to 3ABK. 3AAK is without a beam as his mast is horizontal instead of vertical. 3CS has worked quite a few of the others. More news when we know what is going on.—3ZGP.

SOUTH AUSTRALIA

50 Mc.—Quite a decline in 50 Mc. DX has been noticed over the last month, there being only an occasional VK4 or VK2 opening for the whole period. JAs have been non-existent and nothing at all has been heard from ZL. Local activity, however, has been maintained at a reasonable level, particularly on Fox Hunt and Scramble nights. Crossband working is becoming more popular again and Rick 5ZFQ and John 5ZDZ have been working duplex 50 to 576 Mc.

Les 5ZAG is a recent new station on 50 Mc. and a welcome is extended to you, Les. Several VK5s who may now have worked into VK8 to complete their 50 Mc. W.A.S., may apply for the certificate. The address is: **Mr. A. Kissick, W.I.A. Awards Manager, 1 Macfarland St., Brunswick, N.10, Vic.** Extra stickers are also available for extra countries worked.

The V.h.f. Group monthly Fox Hunt was held on the 18th, with Neil 5ZAW as 6 and 1 mx fox, and Col 5RO as 2 mx fox. Keith 5MT was first home on 2, followed by 5BQ on 6. There was only one 1 mx entry, being Ian 5ZDM and John 5ZDZ. The second event was quite a long one and Garry 5ZFM was first. John 5ZCJ and YL, Christine, did not make the last event due to the excellent view of the city lights obtainable at the finish of event number 2. John is, I believe, re-locating the large mobile accumulator used to power the mobile equipment to prevent further trouble from short circuits.

Mobile activity should receive a boost soon when one of our most active 6 mx stations, Garry 5ZFM, is heard in his new car. Gilbert 5GX has not been heard mobile for a while due to work involved in changing QTH. The new location has some elevation, so Gilbert's signal from the base station should be much stronger over Adelaide. John 5ZBA is coming up with a new mobile tx, running higher power and should be heard more regularly soon. A few 6 mx mobiles participated in the National Field Day and had many contacts. Garry 5ZFM was portable at Mt. Lofty, Ken 5ZCH/5LZ was portable at One Tree Hill, Neil 5ZAW was mobile in the suburbs and your scribe portable at Ashton.

Propagation conditions are improving on 2 mx, Hughie 5BC having been heard and worked by Bob 5ZFG and possibly some of the other VK5s too. No sign of Stuart 5ZDG from Whyalla yet. Mick 5ZDR has paid him a visit to urge him to stoke up the gear. What about it "Stu"?

5BC and 5AW have also been heard working each other and stations in VK3.—5BQ.

WESTERN AUSTRALIA

Apologies for no v.h.f. notes for some months now, however what with making arrangements for his wedding and then the honeymoon, and now married life, 6BE has not found time to write them.

50 Mc.—Activity during the past months has been varied. The openings to the east have not been as numerous as in previous years. Whilst the stations from VK2, 3, 4, 5 and 7 were heard and worked quite often, it is regrettable that once the Ross Hull Contest concluded Eastern States contacts seemed to cease. However the band was open several times and we were able to hear VK4s working VK2s and 3s, both sides of the contact being copied. This would be off the side of those beams. We were unable to make ourselves heard.

Kevin 6ZCB was operating portable from Mannagin during the contest and totalled up a very nice score. Bob 6ZBY was also around quite a deal. Incidentally, Bob passed his c.w. in January and now operates under the call sign of 6RG. Congratulations, Bob, but please remember 6 mx occasionally and don't forget that the ratings for a 6146 in c.c.s. are lower than for i.c.a.s.! Roy 6ZBZ started off well in the Ross Hull but due to an unexpected working trip to Kulin, was unable to complete the contest. Roy also sat for the c.w. in January but as yet does not know the results. Here's hoping. Bob 6ZCF received a pass in c.w. and is waiting for a new call sign. There may be others who were successful that I do not know of; if so, congratulations to all. Brian 6ZBJ, who is now living in Geraldton, broke through to Perth on 6 mx on 26th and 27th February with 5 x 9 sigs.

Activity on 288 and 576 has been quite noticeable and several stations have conducted very interesting checks. Stan 6ZAS, Kevin 6ZCB and Jack 6BU intend going down south at Easter to conduct checks on 50, 144, and 288 Mc. Good luck, chaps.

The West Australian V.h.f. Group station took part in the National Field Day and have submitted a very nice log. All bands from 3.5 to 144 Mc. worked. More of this later when we write an article on the subject. An item of great interest is the fact that Bennie 6KJ watched a full programme of t.v. on Channel 9 which was being transmitted from South Australia. Bennie lives in Albany.—6ZBZ.

TASMANIA

This year's "Athol Johnson Memorial Contest" for intrastate operating was very successful, there being a marked increase in activity over last year's contest. Portable/mobile stations over this period were 7ZAK, 7ZAS, 7ZAX and 7ZAO; bands in use were 6, 2 and 1 mx. Longest distance worked was from 7ZAK portable at Mt. Wellington to 7LZ Launceston (100 miles) on 144 Mc. It is expected that Alan 7MY will finish up on top. Fourteen stations participated.

The February meeting of the V.h.f. Group consisted of a visit to a local transmitting station and was very well attended. A Fox Hunt is planned for April 18 as part of the Institute fund-raising programme. Although both 3.5 and 144 Mc. will be used, we hope that as many as possible will make use of the v.h.f. band and prove its worth.

50 Mc.—Jack 7JB is constructing 50 Mc. receiving gear by the use of which we hope to have V.h.f. Group news included in the 7WI broadcast. This should enable v.h.f. operators in the north to be kept in touch with what's happening down south. Things have been rather quiet DX-wise, but we weren't completely left out. Feb. 1 and 3 brought good openings to VK2, 4 and 5; the 17th and 18th being the only other openings. Rather patchy on 17th, but came good the following day with VK2 and 4. A foreign f.m. station was heard on 16th at 1500 hrs. on 48 Mc., no Amateur signals heard however.

Locally, quite alive. Michael 7ZAV was heard for a week or so, but is heard now only when Channel 6 is off the air; has t.v.i. in a week signal area.

144 Mc.—This band is at last showing promise. On 25th, Barney 7ZAK heard a carrier believed to be Col 7LZ in Launceston. This is the first time for quite a while that sigs from the north have been heard in Hobart. No contact was made but it should only be a matter of time. 7ZAV in New Norfolk has gear operating and is building a 10 element Yagi. 7MY provides a good signal there over 35 miles of "difficult" terrain.

288 and 576 Mc.—No new stations are active, although 7MY is building crystal controlled gear for both these bands.—7ZAO.

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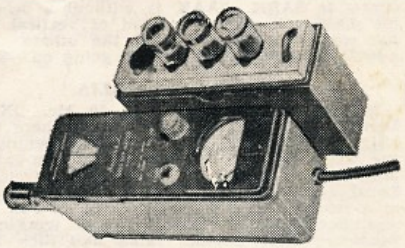

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S W L

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

On 4th and 5th Feb. this year, the VK3 S.w.l. Group held its first S.w.l. Convention at Shepparton, 112 miles north of Melbourne. What a success it was. Do you know, there was only one thing that didn't come, you! What a shame, you would have enjoyed yourself (excuse me you other VK S.w.l's. this is directed to the VK3 Group only).

To think that out of 100 listeners in VK3 only nine could get together at Shep., rather disappointing don't you think? I mean to say, it was arranged for you, so that you could all hear and see something concerning radio and that's exactly what we did. Do you want another one next year?

We had a visitor from ZL land, Barry Thomson. He came all the way from Sydney just for the week-end and couldn't thank us enough for inviting him. By the way, Barry has 241 countries confirmed in 6½ years of listening. How about that, eh? He uses an Eddystone 750.

We all left the rooms at 1315 E.A.S.T. and arrived at Shepparton at 1715 hrs. Ron Young got us lost (that is, Dave Fraser and I). Ron wanted to go on to Benalla, but after a few miles we enticed him to turn back for a mile or so and cut across country on to the main road to Shepparton and eventually arrived there. After booking into our hotel rooms, tea was had. Then Ron, Dave and I went to a drive-in theatre while the rest of the gang went out a few miles to hear 50 Mc. DX. Nothing was heard at all, much to their disappointment. John Donald enjoyed himself at a dance, don't know what time he went to bed. He must have had a nice QSO with that YL.

Next morning after a very nice breakfast, we waited for our worthy organiser Ian Woodman. He arrived just after 10 a.m., so we proceeded towards Mooroopna and ended up in a dried-up creek bed to hear the 3WI Sunday morning broadcast. We heard 7WI OK, 5 x 7, but do you think we could hear 3WI, not on your life. It just wasn't there, not even the carrier. Then at 1100 hrs. in came 2WI, so we listened to them.

By this time the weather was getting rather warm. So we decided to head for the lake and lawns. We settled down to listen to Eric Trebilcock; he spoke to us for one and a half hours on his Acting QSL Manager's job and his life history.

The following is some of the points he mentioned. Eric started s.w.l. in 1926 and learned the code, used the buzzer and sounder; he received practise from ships on 600 metres. He passed the code at 25 w.p.m., through the G.P.O., was at it every day at work and home. Since 1928 he has lived in 18 QTHs, two years in each State except VK6 land. Eric told us he has never used a rx with more than 5 tubes in it and has never used a rotary beam. His antenna has always been a long wire and states that to get anywhere in listening, you must persevere. He first listened on battery-operated rx's and what a drain on the pocket. (He never had time for YLs, DX was better. Who's he kidding, hi!)

In the old days Hams used to transmit on the b.c. band playing music; they would announce their call sign and frequency and ask for reports (they don't know now, Eric, do they?). They had quite a lot of listeners.

When Eric joined the W.I.A. he was in VK5 and his certificate (associate) is No. 5. He showed it to us, the writing has faded somewhat, but it's still the same certificate as now issued. Eric sends out 2,000 reports per year and spends five minutes on each report—please take note you s.w.l's.

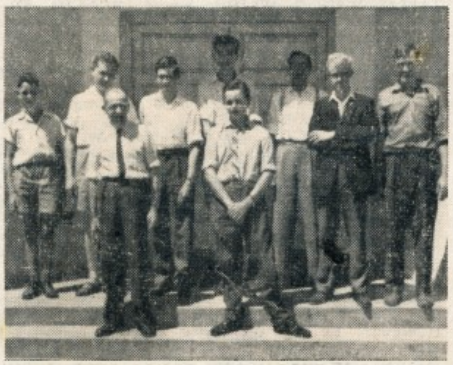
In general, Eric says that the general trend in Hams is that they are not interested in QSLing (what a shame). He goes on to say that he has had more luck with DX stations in getting a QSL when Amateurs who have worked the station can't get a card (good for you, Eric). He gets about a 50 per cent. return.

Eric recommends to all s.w.l's. and those who intend to do s.w.l., learn the code. He says and he would know that there are more Amateurs using the code today than either a.m. or s.s.b.; there are more contacts made on c.w. than on phone.

Eric has one pet aversion, and that is that s.s.b. stations do not give their call signs often enough—it's just "over" or "break". I agree with him, it is most annoying to hear s.s.b. stations have a QSO for such a long time, and not announce their call signs. If a.m. stations and c.w. do, why shouldn't s.s.b., anybody would think they were on a telephone.

After lunch, we travelled for a couple of miles and for two hours we had explained and shown to us Radio Australia, the most popular short wave broadcast station in the world for the past few years. At the moment great changes are taking place, which I do not think I can divulge. On the whole, all of us thoroughly enjoyed the tour of inspection. The S.w.l. Group would like to thank the P.M.G. Department for allowing us to visit Radio Australia, and our thanks go to the officers who showed us around.

This month I am going to omit the VK s.w.l. news and correspondence, because I want to write to you all on how I QSL an Amateur station. I am doing this because quite a lot of s.w.l's. have written to me since the Jan. issue, when I enclosed the letter from W0ZTL —so here goes.



Some of the members present at the VK3 S.w.l. Convention at Shepparton. Left to right: P. Thorn, M. Hilliard, E. Trebilcock, R. Young, J. Donald, C. Cook, M. Cox, D. Fraser, and B. Thomson (from ZL).

"HOW I QSL"

By Maurice Cox, WIA-L3055

Fellow s.w.l., over the years the s.w.l. has become quite a nuisance to the Amateur by virtue of the fact that in many cases the reports are valueless, of no interest, and contain no useful comments. In other words, they are only card-cadging.

The Amateur, whilst carrying out his hobby, does a useful and worthwhile job, so let us try to be equally as useful in our section of Amateur Radio.

Don't have a lavish card printed, only to come to rest in a waste container, because this is where most of them finish up. Amateurs do not collect s.w.l. cards, and unless you make your reports worthwhile, all cash spent will be down the drain.

An Amateur QSL is an acknowledgment of a well composed and useful report, and as cards cost money, he is not going to send them to every Tom, Dick and Harry who write to him. Some of these chaps receive many s.w.l. reports each month and they will not QSL unless you earn it, I repeat, earn it!

We ask you to help us get for the S.w.l. the recognition he deserves, not the bad name of the past. Forward only the best possible reports, and then you can feel satisfied that you are doing a worthwhile service to Amateur Radio and thereby improving Ham and S.w.l. relations.

I would like to add just this. If you report well, you listen well, and when you have eventually your own station, you will be, I am sure, a good operator.

The following is what I put on the back of my QSL card to the Amateur. (This card is made to a North Dakota station.) QTH: Flat 1, 37 Boyd Cres., Olympic Village, West Heidelberg, N.23, Victoria, Australia. To Radio W0ZTL your 14 Mc. phone signals received here at 1350 GMT, 0750 approx. C.S.T. your time, 2350 E.A.S.T. (my time) on 15/3/60 (my date), 14/3/60 your date. You were calling CQ and then you worked VE3BPA. You were readable 5, strength 9, QRM at times by W0SFE, who was readable 5, strength 9, QRN rather bad, QSB nil. Wx here fine and mild night, temp. 62 deegrees F.

Other stations audible on the band at the same time were W9QPQ at 5 x 8, W0SFU 5 x 9, W0RAZ 5 x 9.

My receiver is a National HRO 50, 11 tubes using earphones. Antennae 68 ft. windom, N. x S. 37 ft. high. I hope this report is useful. Do you need further reports? Please, if you think this report warrants it, QSL direct or via the W.I.A. Bureau, 73, Maurice R. Cox, WIA-L3055.

The following is what I put in the letter or in the official VK S.w.l. Report form and is as follows: There are two examples, first one to VE7JB:

"Dear Sir—We heard your beautifully strong modulated signal in the early hours of this morning. We were greatly surprised to eventually discover that you were in VE land. We honestly thought it was one of our own local VK3s. On looking at a map of the world centred on Australia, we were receiving you from the back of your beam. Would we be correct in saying this, sir? Firstly, we heard your QSO with VE3EI and you mentioned that the summer was getting monotonous. No snow was left and it may hit the lumber trade. Also you have a Ranger tx. Roland got you VP8AO, and that QSO ended at 1220 E.A.S.T. You then made contact with VE3AXW and you QSYed down to his frequency. There was some teletype on this freq., but you overrode it. You asked him if you could make a phone call into Toronto and the number was Howard 65131 and asked for Lois. Just then VU3DW (Dancing Witches, as he says) tried to QRM you but you held up with your signal.

"There was some fading which was slow and deep. Not much QRN. Some of the stations that tried to QRM you were HL2AO, KA2KS and VS2DW. They were on the side of your freq. but with your great sig. strength it was only at times we were able to hear them. Your modulation was excellent. I could not fault it in any way. I hope this report is of help to you. All the very best of DX, 73, M. R. Cox."

One other example is to VK4HC: "Dear Henry—We heard your QSO with HB9ET this evening and thought you may like a s.w.l. report on your signal. To begin with, we heard you mention the following details to HB9. Kurt was your first HB9 and you would like to QSL, your QTH in Ipswich. You are running 65 watts, a 2 el. rotary beam 40 ft. high, 813 in the final, pair of 807s in Class B, rx is a BC348. You also have a SX25 rx working at 75 per cent. You transmit wholly on 20 mx, but hope to go on all bands soon, when you have re-built. You are new to the game, only four months on the air. So much for your QSO, Henry. Regarding your modulation, to me it was not so good. It sounded distorted (and I was listening with cans), when you breathed out there was a crackling sound as if you were speaking too close into the microphone. There was also a hum on your signal which faded with the QSB.

"Henry, I hope that this report is of value to you and that I haven't been too critical. Congrats. on your first contact with an HB9. I heard him at 3 x 4."

Well there you have it, my friends, tell them something of what they talked about and that is definite proof to them that you heard them.

DX LADDER

		Con-firm.	Hrd.	Zon. Conf.	No.of Cards
L3042	Eric Trebilcock	261	275	40	6577
	Rod de Balfour	122	180	—	—
VK4	C. Thorpe	85	137	34	422
L2022	D. Grantley	70	218	34	—
L3074	M. Hillard	55	195	24	145
L3055	M. Cox	29	195	19	82
L3015	M. Ide	28	86	—	—
L3065	I. Thomas	16	126	13	30
VK4	A. Westcott	15	143	—	—
L3072	T. Heywood	12	80	11	16
L2211	C. Aberneathy	13	31	4	—
L5031	C. Hutchesson	96	5	5	—
L3088	D. Grantley	4	130	—	10
L5020	F. Aslin	4	40	4	—
L2057	R. Wood	3	3	3	3
L2159	R. Thompson	2	73	2	—
L2052	T. Mills	2	14	2	—
L3006	I. Woodman	1	4	1	—
L5026	G. Smythe	1	26	1	—
L7013	N. Fisher	—	22	—	—
L2185	A. Chatto	—	79	—	—
L2158	B. Vleck	—	79	—	—
L2204	S. Ferry	—	35	—	—
L3077	D. Fraser	—	69	—	—
L2011	G. Albeck	—	18	—	—
L2155	P. Irvine	—	5	—	—

Before I close, I want to thank all who have written to me with information regarding themselves and their gear and photos. Next month I will answer all the letters through this column plus other features.

73, best of DX, Maurie, L3055.

D X

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.
Phone: UW 4248.

In compiling the notes this month I have had to depend, mainly, on information sent in by other Amateurs and S.w.l's. as I have not been so active for a few weeks. Due to circumstances beyond my control I can't see how I will be able to find time to be very active on the DX bands during the rest of this year. Any items of DX news, band conditions, etc., you may have would be appreciated, so please send them along each month.

Most reports say the bands were not as good as they were this time last year, but, on looking through the lists a lot of good DX has been worked and heard. The trend of activity seems to be moving toward the lower frequencies. Good reports of contacts on 160 mx have been received from those countries who are permitted to use this band. This is an indication of what is happening as we move away from the big sunspot period and it now seems certain that the 80 and 40 metre bands will be much more in demand over the next few years.

Kure Island—about 200 miles north of Midway Island—has come into the DX picture over the past few weeks. KH6ECD has been active from that spot on a couple of occasions for about three days. The big excitement over these transmissions is the possibility of Kure becoming a new DXCC country. If you have missed out on these transmissions so far, all is not lost, for there is a strong possibility of a permanent station on the island at a future date. The new call sign will probably be KK6CG. These DX-peditions used s.s.b. and c.w. on 7, 14, 21 and 28 Mc. It is understood that a permanent station would run about 500 watts.

QSLs for the KH6ECD contacts should go to KM6BL (Ted Woods, Navy 3080, Box 18, F.P.O., San Francisco, California).

Tanna Tuva.—Recent operation from this locality by UA0KYA and UA3FE/0 on s.s.b. was the first time this mode of transmission had been used from this spot. Although Tanna Tuva has been removed from the official DXCC country list, the Zone 23 makes it a very good one for W.A.Z. Reports indicate that this s.s.b. station will next appear at UM8FZ. The most used frequencies are within 10 Kc. of 14300 Kc. Listen for them between 1100 and 1300z.

Rui CR10AA, the only Amateur operator in very rare Portuguese Timor, has been inactive for many years. Rui has been away from Timor, on leave, but will return this month and there is a possibility of him coming on the air again soon. If he goes back to his old job in Dili, he will be using a low powered battery rig, since no a.c. is available. However, if he gets a prospective new job at a transmitting station on air airfield at Baucau, he will have a 220v. a.c. power source available, as well as a variety of rhombics and large antenna masts.

Chuck VK8TB is planning a trip to Timor in the near future. There is a licensing snag, however, as all foreigners are unable to get a license. If you are a resident this ban does not seem to apply. Chuck thinks there is a good chance of him getting permission to operate CR10AA's station. So there seems to be a glimmer of hope for many of us to get a chance of adding CR10 to our DXCC list.

Steve VK2VK, of Tweed Heads, is now VK-0VK at Wilkes Base in Antarctica. (3ARX)

A well known DX'er, Fred Lutz (DM3RM), would like a young VK lad or girl age 15 or 16 years, whose Dad is a VK, to write to his daughter. His daughter is learning English and letters from Australia would help her in these lessons. Address in the first instance, write to Fred at Altenburger Strasse 21, Schmolln (Bz Leipzig), German Democratic Republic.

Danny Weil, in his attempt to circumnavigate the world, has possibly come to a full stop. After a series of heartbreaking events, the Yasme III. with Danny and his wife, Naomi aboard, were towed into San Diego Harbour (California).

A good (heavy) pat on the back for a couple of VK7s who sat in the middle of the 7 Mc. c.w. band on phone working each other while the band was wide open to U.S.A. in the A.R.R.L. Contest.

Nauru.—A Victorian Ham who is a doctor has gone to Nauru and the boys are hopeful that he will get on the air soon. Rumour has it the home call is VK3AMK, but cannot verify as yet or ascertain the VK9 call sign. (3ARX)

Ron VK2ZRF is now on Lord Howe Island. He expects to be active on 50 Mc. very soon.

Signals from the U.S.S.R. are still coming through with good strength on 14 and 7 Mc. bands. The best times from my location in Sydney is 1100 to 1330z. Some of the rarer prefixes such as UG6, UM8, UJ8, UJ7, etc., are frequently heard.

ACTIVITIES

Laurie **VK2AMB** was active on two bands but found the DX scarce at the times available for operation. On 7 Mc. c.w. he worked KH6ECD on Kure Island and KC6USH. Those worked on 14 Mc. c.w. were FB8CE, UB5KED, and UB5DV. Heard: FR7ZD, FB8CQ, EP1AD, SV1AO, BV1USA, 5A5TO, MP4MAH; phone heard: ZE7JR, VK0BH, OA1X.

Frank **VK2QL** had a number of QSOs on 3.5 Mc. c.w. and among others worked VR2DK, JA8LN, W6HOC, W6JPP; heard: ZS6AJH, DL-4DG, DL6ST, UB5BL. 7 Mc. c.w. worked: KP4CGA, G5VB, CN2BK. 14 Mc. c.w. worked: EP1AD, 8J1AD; heard: ZP5LS, MP4MAH, HS2M. Best time for 7 Mc. DX was from 0630 to 0800z.

VK2ZR had only 12 QSOs for the month and included LA3DB, VK0VK, UA0TN, VU2EA, UA0KKC, KL7CUK, all on 7 Mc. c.w.

Rick **VK3ARX** stayed on 14 Mc. c.w. to work the following: CT1HX, FK8AN, ET2US/ET2, LZ2FA, SM5VK/9Q5, UW9KCA, SV0WR, VP-6LN, 5A5TA, 6O1MT, 9U5MC. He heard and called XW8AQ, ZP5LS, AC5PN, UA2KAE, UP-2KA. Rick is building a fixed 8JK beam this month to see if they are as good as the one he had 25 years ago.

Hal **VK4DO** says "conditions were very changeable; sometimes good and sometimes bad. QRN was troublesome all the month." However, he ran up quite a good score. 14 Mc. c.w. worked: W/K, KH6, JA, DJ3NWA, DJ4AYI, DL9RK, F8FE, F8WK, F8ZF, G2BB, G3NAN, G8PP, HB9MU, IT1AQ, I1ZL, JZ0PO, KW6DF, LU2ACH, OK1ADM, PY5KW, PY2AB, PY2VB, SP5ADZ, UA0KVA, UA0KOA, UA-0KZA, UA0KKD, UA3AF, UA1KAG, UA6AF, UA6UF, UB5KAB, UB5KEP, UB5JX, YV1AD, YV5BA, YO3AM, YO7DL,. 14 Mc. c.w. heard: CT1DJ, DL1EE, EA8BW, EQ5X, ET2US, G4OI, G6CJ, HC1LE, HC2CB, I1MIL, I1TFF, I1ZIE, LU2DAW, LU9FAZ, LZ1KSZ, SM7WT, SP4JF, UB5KAS, UB5KCF, UB5KSR, UF6KPA, UL-7KKB, UR2KAN, VE0NN, YS1O, YV5AXA, ZB2I, 9U5VL, 5N2LKZ, 5N2RSB. 14 Mc. phone: I1AOQ (band very poor and noisy). 21 Mc. c.w. worked: W/K, DJ2AA, DJ2FW, DL1GV, DL1DX, DL1JF, DL4NAC, DL4BS, DM3ZDO, EI4A, G2FFO, G3IU, G3ZY, G6VQ, I1ANN, OE3UP, OE7GF, OH1VA, OH3OD, OH2PM, OH7NL, OK1KJQ, OK1RX, UA1KAS, SP8JA, UI8KAD, VS1FE, 4S7LB; heard: DJ4TJ, DJ-6TN, G2BB, HA5KFR, SM5EC, SP9SG, UA9VS, UJ8KAA. 21 Mc. phone worked: W/K, AP2MR, CR9AN, CR9AI, KR6LZ, OH2PM, UR2BU, 9M2DQ; heard: G2DX, VS6CL, VS9MB. Long path openings in the afternoon to Europe and East Asia accounted for quite a number of the above contacts.

Alan **VK3CX** has been to Sydney and Hobart in recent weeks and met several of the locals; hence no report of activities from his home station.

Eric **BERS-195** has again, this month, heard lots and lots of good DX. 7 Mc. c.w.: DJ2KS, DJ2RE, JA1AEA, UA3KND, UB5FP, YO7DZ. 14 Mc. phone: HL9KS, VK0FZ, 9N1MM, VK-8EW, VE0NN. 14 Mc. c.w.: BV1USA, BV3HPT, DU1CV, FA8RJ, FB8XX, FK8AW, FK8AI, HC-1LE, KB6BC, JZ0PH, KR6MS, KW6DF, KV4AQ, KW6DG, MP4TAC, VK0BH, VK0VK, TI2PZ, UJ8KAA, UP0LB, VR2DK, VP9EP, VS1DN, VS6EP, XZ2TH, YV1AD, YV2BJ, ZK1AR, LA-7RF/M, LA1SH/M, 9M2CP, UQ2AE/MM, and VE0NN.

Don **L2022** is spending more time listening to the various bands and is of the opinion that 15 and 10 metres will not be of much use for the next four or five years. Also the 20 metre band is not as good as it was. However, the 40 metre band is picking up and with the help of 80 will carry a big share of Amateur activity over the lean years. He has heard three new countries this month—UG6, FF4 and CP1 to take his score to 218. The following have been heard—3.5 Mc. c.w.: OK3KCA, FG7, W/K, JA. 7 Mc. c.w.: JA5HD, KR6KF, JA1EUV, LZ1KBA, VE5FQ, W7ALL, UA0KZK, DU7SV, UA0KCA, HA5KFR, 4X4DU, UB5KCF, UG-6KAA, UL7IJ, UA9DQ. 14 Mc. c.w.: VE0NN, UL7KAA, BV1USA, JZ0PH, UB5KAB, ZC4SS, OK1KKG, UM8KAA, ON4VS, HC2IU, KV4CI, FF4AL, UJ8KAA, VS6EP, HM1AP, HS1R, XZ-2TH. 14 Mc. phone: CP1BH, DU6TV, XW8AL, VU2HS, 4S7YL, TI2ES, KC6CJ, OA4DT, YN-5ANX, 9M1MM, VP6GV, VS1FZ, and on s.s.b. HC1XE. 21 Mc. c.w.: DL1DX, ON4TJ, UB5AQ, DL6QR, ON4RN; phone: VP9PJ, KR6DO, CR-9AI, G2FQD, GW2CCU, OH5NW, VS6CL, ZS-5TG. 28 Mc. phone: Ws, KG6EJ, KH6ARG.

QSL SITUATION

Ray Jones is back home and again doing the Federal QSL job. The VK3 Division of the W.I.A. has asked Eric BERS-195 to manage the Inward QSL Bureau which, for the time being, he has accepted. Thus, these Bureau chores are in very capable hands and efficient services are assured.

QSLs received during the month: **BERS-195:** BV3HPT, KM6BV, UC2AG, VP9QQ, VR3KD, VR3X, XE1PJ, YV3BD. **VK2ZR:** 83 cards which included OD5LX, HC1JU, VS9OA (Oman), JZ-0PO, KV4CI, UT5CC, 4X4JL, LA8FG/P (Spitzbergen), VQ2CZ, UI8KAD, ZB1JB, UD6BB, ZE4JS, UN1AE, IT1AQ. **VK2QL:** CR6CV.

I wish to thank Don Chesser, of Kentucky, for several news items taken from his DX magazine, also those in VK-land who sent in notes. 73, John.

z zero time—GMT.

NOTES

FEDERAL QSL BUREAU

Your long-standing scribe is pleased to be back on the job once again. The overseas tour was a huge success and the rich experiences and widening of horizons will long remain in my memory, together with recollections of many fine Hams encountered on my travels.

In retrospect, two salient thoughts emerge; firstly, that nowhere is real unfettered freedom enjoyed as we know it in Australia, and secondly, that all things considered, there is more value for money in Aussie and the difference is not fractional! Furthermore, the insidious demands for gratuities practiced generally in Europe and most other places is repugnant, and constitutes a moral blight on the countries concerned.

I cannot allow this opportunity to pass without publicly thanking Eric Trebilcock, BERS-195, for his spontaneous offer to "stand in" as Federal QSL Manager during my absence. The large number of eulogistic comments from world-wide sources is sufficient testimony as to the manner he performed the duties of the position.

Eric BERS-195 liked the duties of Acting Federal QSL Manager so much that he has now taken over the position of Inward QSL Manager for the Victorian Division in succession to Noel VK3ZO.

Ted VK5JE visited Melbourne and Hobart as a member of the S.A. Postal Institute team journeying to the Annual Carnival held in Hobart in March.

Over the past 10 years, I have frequently lauded the artistic talents of Jose Gimenez, EA5BA. His artistic embellishments to his QSLs make those cards extremely desirable. A recent bunch to hand leaves no doubts that his art is improving with the passing years.

Russ VK9XK expected to button up in Port Moresby around early March. Recent advises indicate however that his relief will not arrive until the end of April. Russ is doubly cheesed off by the fact that he had dismantled antennae and packed all his gear, prior to receiving the deferment news.

—Ray Jones, VK3RJ, Federal QSL Manager.

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FEDERAL AWARDS

D.X.C.C.—The Mali Federation (FF8), comprising areas previously known as Senegal and Fr. Sudan, was formed as from 20/6/60 and given separate listing in "A.R.," Sept. '60. After a short period, this Federation changed to Senegal Republic and Mali Republic (formerly Fr. Sudan). Both Republics will now be given separate D.X.C.C. listing as from 20/6/60.

Kaliningrad Region (UA2), situated on the Baltic Sea between Poland and Lithuania, forms part of European R.S.F.S.R. from which it is sufficiently removed to justify separate listing as outlined in "A.R.," Oct. '60, page 26, for any post-war contacts.

Amend D.X.C.C. Countries List published in "A.R.," Jan. '61, accordingly.

50 Mc. W.A.S.—Congratulations to Geo. VK-5GG (ex-VK5ZGA) who has been issued Award No. 19 with the additions of Papua, New Zealand and Japan, and to Bill VK5ZAX, who has been issued No. 20 with the addition of Papua.

W.A.V.K.C.A.—Mainly as a result of recent activities in the Northern Territory, further Awards were issued during Jan.-Feb. as under:

No. 148—W9LIL, Tom Taylor.
„ 149—W1VG, "Pete" Morrow.
„ 150—W6GMC, Milton Smith.
„ 151—W4IMI, Ken Cole.
„ 152—K6CQM, Bob Murphy.
„ 153—W9GFF, Bud Frohardt.
„ 154—W2TP, H. G. Mustermann.
„ 155—W3LE, Louis Bremer.

—Alf L. Kissick, VK3KB, Awards Manager.

NEW SOUTH WALES

HUNTER BRANCH

The first meeting for 1961 took place at the usual rendezvous when films by courtesy of 2RJ and 2VO were projected by the honorary of that profession, 2AKX. Those present were 2CS, 2ZL, 2AKX, 2QB, 2AYL, 2ZNW, 2ANA, 2RJ, 2ZK, 2XT, 2AQR, and associates Sutherland, McLachlan, Foster, Gray, Finch, Bailey, Munn, Stobbs, Mullins and Finlayson. Stuart 2AYF, alias 2ZDF, was an absentee due to mother-in-law trouble. Our old friend, Tom Davis, has had an oscillating appendix removed and is now quite well thank you.

There has been some shuffling around going on at commercial station 2KO; 2MS is now chief engineer, whilst Ken 2KG is to be chief of the new t.v. station NBN. Ken's son, I believe, is starting work under the eagle eye of Harold 2AHA. Haven't heard, but was told that Jim 2ZC is again active, but I did hear John 2XQ tell someone or other that his great uncle brought Wal 2AXH into this world—frankly John, I think you are game mentioning that fact.

Your official branch station 2AWX is now again in full swing and the operators for Feb. were 2CS, 2AYL and 2AQR. One broadcast night a "caller-backer" gave 2CS the report that he was the best signal on the band—of course the reporter, 2NA, is only a newcomer—anyway, Lionel didn't come back, he apparently had fainted.

The lifting of the foreign language imposition has made 2ZL happy as his contact quota has risen—chiefly because the boys were frightened to work one with such an accent. During the month Lew 2AWS called on 2ZL as also did 2AMA, however Clem doesn't think much of Bill's geography and no doubt will stick to a map in future. Lew did the R.I. act on Bill with horrible results. No doubt you have all heard how Bill is conquering his t.v.i. troubles—he invites as many mobillers around then walks up and down his lane so that his irate neighbours can see that it is not 2ZL causing the trouble.

Ernie 2PF is home again after quite an op. They had to take at least 34 stitches out of his throat—no he doesn't live at Kings Cross. Charlie 2ARV is in bed with a broken leg, apparently he plays bridge. Cripes, if I got one of those they would shoot me as I work and eat like a horse. Geoff 2VU is still looking for Newcastle boys on 144—on that frequency. Stan 2AYL does the monitoring on Monday nights and reports back to 2AWX their reports, chiefly from Max 2ZMO and Ian 2ZIF. No your Secretary, Gordon, and myself did not win the lottery, it was only a fiver. Congrats to the working-bee of two the other Saturday at Atchison Street—of course there were others, but they were too busy buying disposals.

Next Branch meeting will be on April 14 at the University of N.S.W., Tighes Hill, and 2XT's social as usual will be the fourth Wednesday, 26th.—2AQR.

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VICTORIA

EASTERN ZONE

Now that everybody is getting back down to earth after the Xmas holidays, activity is on the increase throughout the Zone. Stan 3ZAB has now moved his shack outside. Cliff 3AIT has now the a.c. power on, and is busy building up power supplies. David has been very active down on 10 and 20 mx, as well as joining in the 2 mx bi-weekly nets with 3ZDP, 3ZAQ, and 3ZCG—where is the rest of the net

Peter 3ZDP and George 3ZCG both have been working the Es DX on 6 mx. George 3ZCG also runs skeds with Melbourne stations every Wednesday evening at 2000 hrs. K on 1 mx.

Don't forget your next Convention will be held in April at Yarram.—3ZCG.

WESTERN ZONE

Have been pleased to hear of two new Hams in this Zone. One who has been in Amateur Radio for some time is Murray 3AMP, and he is now residing in Warracknabeal. Murray is not on the air yet but we expect to hear his well modulated signal in the near future. The other is Neville Maddern, who has just been allotted his call sign of 3AAQ. Neville's home town is Jung (near Horsham), but at present he is employed on one of the large broadcasting stations near Bendigo.

Vic 3AEQ, of Murtoa, is now on the air with his new rig, sounds very nice too. Local boys have been contacting Chas. VR1B at regular intervals. Climate and conditions in Tarawa on the Gilbert Islands seem to be ideal for Chas. and Audrey as they are prolonging their stay in that area.—3AKW.

MOORABBIN AND DISTRICT RADIO CLUB

On Sunday, March 12, members journeyed to Mt. Dandenong and were sown over the transmitting stations of HSV7 and GTV9. The visit proved very enjoyable and the hospitality of Peter 3AWA of HSV7, and Mr. J. Young of GTV9 was much appreciated by members.

Our Crazy Whist nights are proving very successful, as are the Barbeques. On Friday evening, 7th April, at 8 p.m., we conduct our first 80 mx Transmitter Hunt for the year. Operating on 3527 Kc. on that evening, a c.w. signal will be heard signing "V V V VK3APC . . ." This is our automatic sender, and you will not be able to make contact, hi!

On Monday evening, 10th April, by the courtesy of Mr. Cecil Beaurepaire, we visit Olympic Tyre and Rubber Co. works. We are looking forward to a very enjoyable evening because, after viewing some movies and then being shown over the factory, we are being entertained to supper.

In all, the Club is steadily progressing, and the theory class should be terminating very shortly. Sixteen members are still enthusiastic. —3LC.

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QUEENSLAND

TOWNSVILLE

February being a very poor month for the Amateur bands, find it very hard to give any news. Although quite a large number hold an Amateur license in Townsville, as the Call Book shows, there does not seem to be the activity of a few years ago. Just cannot say why, even the local ragchews are not in evidence. 4GD and 4EL can be heard almost every night on 28 Mc. talking about their pet projects, in fact seem to have this band to themselves for no DX coming through. Eric, after a session with Len a few night ago, tuned to 21 Mc. and heard an opening, and promptly went on c.w. to work many Europeans; frequent monitoring of his QSOs did not show any new countries, hence I stayed on phone.

Bob 4CR is disposing of his gear and hopes to leave shortly for VK3 to become a disciple of the "one eyed brethren." Claude 4UX brought up the gang from Ayr to the last meeting of the local radio club and had he not done so, the meeting would have been a fiasco. Apparently the locals are just too tired to come along; just pay their dues and never take an active part.

The local Z boys are not so active on the 50 Mc. band because of conditions, so it is to be hoped the band soon opens, either north to Japan or south to the other VKs, and let us hear some activity.

Now that a small wet season has arrived, everyone hopes the noise level will abate and allow us to work the chaps with the weak signals below S9. Cannot remember the noise level being so fierce in the past. When are the commercials going to vacate the 14 and 21 Mc. bands? In fact they seem to be on the increase.

An article in the local press of Feb. 21 created a large interest to the readers, and in fact, I have been asked many questions why we cannot have it here. It was an "Associated Press" release, dated New York, Feb. 20, "Short Range Two-Way Radio Boom," referring to the Citizen Band in U.S.A. and the 22 channels in use on 27 Mc. The article pointed out its extensive use and that 178,000 licenses had been issued in the past two years and now getting applications of 10,000 per month. If granted here, we could not hope for these figures, but think of the tremendous boost it would give to the commercial manufacturers' business in building these sets and help them out of the doldrums at the present time.

Stan 4SA's article in Feb. "A.R.," on his "Pilgrimage for Progress" in Queensland is very timely and it is noted with regret that Townsville, the largest city in the north, did not have a public meeting and liaison formed with W.I.C.E.N. committees as formed in other towns. See that Rockhampton meeting was called by the Mayor and held in the Town Hall. After reading the article, I was reminded of the popular pop tune, "Hang down your head, etc."

Don 4PW, note that Jim 4ZO has new gear and available if required to follow in your footsteps if the bad winds and floods trouble the district. 73, 4RW.

SOUTH AUSTRALIA

The month of February saw in VK5 the holding of the Annual General Meeting, together with the usual monthly general meeting, all on the one night in the club rooms, to a very responsive and large audience of members. Now, I have said before, and I will say again, and nobody has a chance to stop me, that anybody who turns up to a general meeting and an annual general meeting all held on the one night, should have their bumps read. However, the VK5 meetings of this nature have, throughout the passing years, come to mean good entertainment, plenty of laughs, rude and coarse interjections, to say nothing of the revealing of past history of all who stand up on the floor to have their say, by their opponents. This year to add to the general enthusiasm of the membership, the Council added several new angles to the meeting, which to say the least, were a huge success.

Firstly, they fixed it so that the public address went on the blink and nobody could hear a word that was said, then they pushed the business on with a rapid-fire, changing the motions to amendments, then back to motions and back to amendments of the motions, until at the finish nobody knew what was what, or who was who. I for one was completely befluxed, and once found myself seconding a motion for Tubby 5NO, when in fact I meant to second it for Johnny 5KO. This suited everybody fine, and after my somewhat weak explanation was heard in noisy silence, pandemonium broke loose, and I was told the truth about myself in no uncertain manner from all directions.

It was announced by the Chairman, Lloyd 5OK, that owing to circumstances beyond Council's control, or perhaps it was magpies on the line, that only seven members were wanted for Council, and not nine as originally announced, and legal opinion had stated that it would be OK to carry on. This was tossed about by everyone for about a half an hour and then became a motion of the amendment which was the original motion, or something, and the voting was checked by the two scrutineers, Jim 5JK and Bruce 5OR. The result was: Brian 5CA, Doc 5MD, John 5JC, Ian 5QX (an ex-VK3), Rex 5DO, Keith 5KH, and Phil 5NN—and if I might say so, a very good Council indeed.

The Secretary and Treasurer were then asked to retire from the meeting whilst the question of honorarium was discussed. This matter took quite a time, due to everybody wanting to show their appreciation of the two hard-working gentlemen by increasing the honorarium to astronomical figures. The matter was at last satisfactorily settled, and after considerable delay the Sec. and the Treas. were finally located and forcibly dragged back, to face what they by now thought was a hostile meeting, only to be overwhelmed at the generosity of the members. Rumour has it that they were finally discovered at the shop opposite the meeting rooms, quaffing bottles of coke and sipping ice cream on the strength of the coming honorarium. Mind you, you all know what a fickle jade rumour can be!

Moving from the annual meeting to the general meeting did not take long, and a few skirmishes took place, mostly important only to those engaged in them, and then Brian 5CA stole what was to have been my thunder and proposed the vote of thanks to the VK5 President, Lloyd 5OK, who unfortunately could not see his way to serve for his second year. The members showed their appreciation in no uncertain manner and Lloyd, his voice shaking with suppressed emotion and tenseness, thanked them from the bottom of his heart. I know, I know, but it looks good doesn't it?

A couple of more skirmishes occurred and then the meeting closed at the witching hour of 11.15 p.m., although the lights in the hall did not go out until nearly midnight. Everyone had a rattling good time. Tubby 5NO was bobbing up and down all night like a cork, with motions and amendments galore, and apparently thoroughly enjoyed himself, and to conclude this very short description of the meetings, I can only say that everybody echoed the sentiments of one of the hysterical members who stated that it was a pity that annual general meetings only came once a year.

No visitors' book was produced and therefore I cannot tell who were visitors and who were not. However, I can assure you that two notable visitors were confusion and bedlam, and I can also assure you that had a deaf-aid salesman been present at the meeting, he would have made a fortune! Summing it up, it was good to see the number of members who got to their feet and had their say, were roundly insulted and then sat down, because after all, everybody who has paid the necessary fees is entitled to have their say and express their enthusiasm for their Division.

It would appear from my personal observations that if one cares to rise on Sunday mornings at the ungodly hour of 8 a.m., one will be rewarded with the regular contact between Rex 5DO and one of the wise men from the East. The topics that they discuss in this QSO are many and varied, in fact Rex had me in tears as he described his failing eyesight the other morning. I checked over my spare white sticks and guide dogs with the idea of being of some help to the poor old chap, when I realised that he was somewhat exaggerating and after a couple of stiff glasses of water I regained my normal composure.

Heard Lance 5XL and Wally 5DF in QSO the other Sunday morning before the W.I.A. session, and have never heard such strong signals from them before. Strangely enough some ten minutes later they had dropped off noticeably in strength and by the time the session had started they were back to their usual signal strength. Just goes to show.

Brian 5ZCX just back from Wilkes was heard from the shack of Joe 5JO recently, and was heard talking to Lance 5LD about his sojourn at Wilkes. Was amused to hear him say that when he got tired of human company he always had the huskies to talk to. I could have used a couple of huskies myself at the annual general meeting! I might mention that he had pushed his bike from Henley Beach up to Joe's to hear the W.I.A. session, so he is still as keen as ever. He is married, too, by now, and please Brian, always remember those classical words, "DX before Dishes!"

Dave 5DS, Doctor Mac to you, was heard on 7 Mc. the other Sunday morning with his usual good signal and cheery personality. This joker has the biggest following among the gentler sex who listen in from the kitchen to their better-quarter's contacts on Sunday mornings. Why? Well, they lap him up, especially when he says with that broad Scotch accent of his, "Well, OM, will cross to you for a wee small sporran!" Nobody wants to mother me, more likely want to smother me.

Tom 5TL has deserted me completely these days but as I heard Keith 5KH say that Tom is about to take his annual two years' leave, I suppose I will have to forgive him. Lionel 5LB also heard on 7 Mc. the other Sunday, although I say that with my fingers crossed. The last time that I said I had heard him on 21 Mc. I was subjected to derision and insults, so much so, that this time I checked him on the wavemeter, the oscilloscope, the t.v. set, and even rang up Somerton frequency measuring station as a further proof. So, I again say, Lionel 5LB also heard on 7 Mc. the other Sunday. Now get out of that one!

Bumped into Lance 5LD and his charming XYL the other afternoon as I was holding up a shop window that some chap asked me to do until he returned. His XYL used to be one of my keenest readers some time ago, but as she did not allude to my humble efforts in any way this time, I can only conclude that my pen has lost its cunning and my Bon Mots fall on barren ground.

This paragraph will take some believing, but going on my unblemished record for telling the truth and never, never attempting to exaggerate, I will now suitably introduce the subject to a long waiting world. Preceded by a forty-two gun salute, a fanfare by forty-one heralds, and frienzied cheers from the population of Lucindale, the unofficial mayor of that thriving country town in the S.E. of VK5 steps into the spotlight, and unfurling his banner, states in a voice that can be heard as far as Mount Gambier, "Oyez, Oyez, I, Arch 5XK do hereby state that I have no grizzles, I think the VK5 Division is tops and without doubt the W.I.A. session has no superior!" As true as true, so help me. Why? Because the appeal over the W.I.A. session for a xtal suitable for Arch to enter the Field Day Contest brought forth such a response that he is thrilled

50 Mc. W.A.S.

Call	Cer. No.	Add. Cntr.	Call	Cer. No.	Add. Cntr.
VK2WJ	13	4	VK2AEZ	10	1
VK3PG	5	3	VK3XA	11	1
VK2VW	9	3	VK3GM	12	1
VK5GG	19	3	VK3ACL	14	1
VK4RY	2	2	VK3ZD	16	1
VK4HR	4	2	VK2HO	17	1
VK5LC	1	1	VK3ZEA	18	1
VK6DW	3	1	VK5ZAX	20	1
VK3RR	6	1	VK2ABC	8	
VK3HT	7	1	VK2WH	15	

to the backbone. Think of it, Arch without a grizzle, I never thought the day would come that such an event could happen. How did you go in the contest, Arch?

Frank 5MZ, who spends most of his spare time in breaking a leg or an arm, chopping off his toes, or gashing his elbows, was caught redhanded the other day sitting in the wading pool of his grandchild, attired in trunks, fins, snorkel, goggles and water wings, demonstrating to all and sundry the finer points of skin diving. Frank, please be careful, rumour will get round that you are becoming one of Comps 5EF mob.

The Elizabeth Amateur Radio Club entered a station in the recent N.F.D. Contest in the multi-operator section and the following members pulled their weight: 5NO, 5NQ, 5BP, 5HB, 5FY, 5TM and 5ZCA. Mobiles to visit them, whilst they were in action, were: 5ZJM, 5PE, 5QX and 5AX; other visitors were 5DS and 5ZDA. Club members in Tony Strong, Peter Field and Layton Catford assisted whenever called upon. I believe they polled a good score for VK5 and the Club, beside which a jolly good time was had by all.

Ian 5QX has been recently very busy digging his garden and if the white ant rumours can be believed, he has been putting an earth mat down. Personally, I think that he has been burying some of his VK3 secrets well and truly, and so it should be now that he has qualified for VK5 naturalisation. Clive 5PE, Don 5TM and Jeff 5NQ have been busily engaged in the activities of the Elizabeth E.F.S., and I hasten to add that although 5NQ is now a fireman, there is no truth in the rumour that he will attend fires only at residences that possess at least one Morse key.

Tubby 5NO has not been heard on much of late and I can only hazard a guess to the effect that with "Fred" at home and the better three-quarters, Joyce, with the dishes, Tubby does not get much chance to get near the rig. Fred, by the way, is the nickname of 5NQ when he is at home. May I once again quote that quotable quote, "DX before Dishes," and if that is borne in mind we will all be able to rejoyce and rejoyce. Oh go on, it's not that bad.

Steve 5HA has been heard on the air recently which means that the available kc's. at Elizabeth are getting less and less. Ben 5BP has dismantled his rig and has it packed away ready for his departure from VK. By the time that this is printed he will have left en-route to ZL, ZS and finally G land and he will be missed from the ranks of the Elizabethans. Bon voyage, Ben, which freely translated for you ignorant peasants, means in Egyptian, "Goodbye and God Bless You Ben, here's hoping that we see you again soon." What a bore it is to be educated.

Harry 5EU can often be heard on 21 Mc. and my spies tell me that he has a "thing" in his shack which looks for all the world like a Morse key. A close watch is being maintained on the position. Pete 5HB is putting out an f.b. signal from the Grove with his QRP rig. He has moved into the recent QTH of Ken 5BS. They must reserve it for the c.w. men! Keith 5EJ is heard on the air every other week-end, which means to my keen anylit—anilyt—anilytic—well it means to my mind that he only gets away from Woomera every other fortnight. I didn't spend a year in MI2468 for nothing. Another well known old Amateur, and I use the word "old" only in Amateur years, looks like coming back to clutter up the bands—none other than Ray 5FF. Shades of 5WC. Don 5TM is mainly on 50 Mc. these days, which means of course that he is out of my clutches as regards these notes. I only write about the d.c. boys! D.c., wouldn't it?

Ron 5FY, the enthusiastic and capable Secretary of the E.A.R.C., is still running his 50 watts (so he says) of c.w., and my local spy (who although right on the ball must remain nameless) tells me that he has switched his allegiance from dipoles to 66 foot Zepps. Off the record, did you notice the smoke rising from his head at the meeting when the final honorarium was arrived at. The subscriptions of the E.A.R.C. look like rising sharply to take care of the germ of an idea which was obviously coming to life in his head at the said meeting!

Cyril 5DY has been up north quite a bit lately, so his dulcet (whatever that means) tones have not been audible to his myriads of listeners. Pardon me going all lyrical, eating onions always affects me that way. Peter Field, L5039, can be seen and heard on the air from most of the shacks at Elizabeth at various times and Layton Catford (ever heard that name, Catford? He is the nephew of that Bod who asked for a spoon to stir his tea at the Xmas Get-together, also a son of that disturber of the ether at Clare, 5XL) is studying hard for his ticket. Don 5KD is reported as likely to be moving Interstate soon. No mention of which State, and all I can say is I hope that it will not be VK3, I have been told that a VK5 walks in fear of his life in VK3. True as true.

By the way, if you are interested in securing the Elizabethan Award, the following list of call signs might help: VK5s DY, EJ, EU, EV, FY, HA, HB, HU, HV, KD, NO, NQ, PE, PF, QX, TM, ZAK, ZCA and ZJM. 500 pounds reward will be paid for the capture of these desperadoes, breathing or unconscious, sorry, sorry, wrong page. These 19 gentlemen are made up of 10 phone types, six perfect gentleman, one Donald Duck, and two miscellaneous, seldom heard.

At this time of the year it is my sad duty to pay to the appropriate authorities the sum of one pound for the purpose of retaining my call sign and the benefits thereto. Now if I wish to renew my wireless license, my t.v. license, pay my telephone bill, buy stamps, postal notes or any of those chores associated with the P.M.G's. Department, I simply call into any post office, big or little, and pay up and smile, a sickly smile mind you, but at least the whole sad business is simple. But, can I pay my Amateur license so easy? No, and a thousand times no. I must go into the city to the G.P.O., I must go to a special section, at last I can pay up. Now why? I suppose there is a perfectly good reason for this, but again why? I hope this meets the eye of my old palsy-walsy Maxwell 3ZS, and possibly he will make it agenda item 100000000002. I know he will fight for me, because he will remember how I fought for him, or against him, when he wanted that filing cabinet for F.E., many years ago. All right, let's drop the subject, but seriously, why can't we renew our licenses like the others associated with radio and t.v. After all, a lot of us find it difficult to make the city during the week days.

My spies tell me that Ted 5JE, Doug 5KK and Tom 5TL have been sighted in VK7. Putting two and two together and making it six, I presume that they are in the party of P.M.G. sportsmen from VK5 who are out to do battle with their counterparts in that fair isle. One thing is certain, with Ted moving around in that area, the whole of VK7 will be parked on 7 Mc. in the future! Les 5AX heard on the W.I.A. call-back throwing out his chest on the strength of a 5 x 8 report from Keith 5WI. The signal from Les was well above normal, too, and there is no doubt that the Gawler boys know all the tricks about good signals.

Talking about tricks from Gawler, Comps 5EF also heard on the W.I.A. call-back. I rushed out to my special s.s.b. room, turned this, turned that, pulled this and pulled that, but nary a bit of intelligence could I get. You can imagine how I felt later when I heard that he was on a.m. and not s.s.b. The depths to which he will sink just to trick me! Fred 5MA was another surprise heard calling 5WI the other Sunday morning. First time that I have ever heard him on 7 Mc., nice signal Fred, some more please.

The notes next month will be written by someone unknown to me at the moment, and purely as a means of protection for my hitherto unsullied name, I would suggest that absolutely no notice be taken of anything that is written concerning me. What do I care anyway, I will be on holidays. (Only once a year does fortune smile on us.—Ed.)

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TASMANIA

February and early March has been remarkable for the amount of mobile and portable work. The National Field Day Contest was well patronised, both from portable and fixed stations. I heard the following portable stations taking part: VKs 7CH, 7LJ, 7JO, 7JB, 7TT and 7YY. We have also had mobile marine stations active at times other than the contest period, when Snowy 7CH and Ken 7KA both put out good signals while afloat. It is good to hear Bob 7OM back on the bands again, now that he has replaced his burnt-out modulation transformer by a power transformer, which works really well. Terry 7CT is also back on the air, after establishing himself in his new QTH in Bellerive, and he is putting out a very strong signal, especially on 80 mx.

At the Divisional March meeting, we were fortunate to have another address from Mr. Dowden, of the Ionospheric Prediction Service station here in Hobart, who lectured us on noise on low radio frequencies, illustrating the techniques very lucidly on the blackboard.

About the end of Feb. we had several visiting Amateurs within our Division, 5ZCN, 5JE and 5KK. We hope you each enjoyed your stay with us, chaps.

The March Council meeting will be the last such meeting to be attended by Joe 7BJ, at least for the present, as Joe has decided to refuse nomination as a candidate for the next Council. We on Council will miss you, Joe. You are the undoubted expert on our Constitution, and your long association with the management side of our Institute has left you with a great knowledge of its affairs and such knowledge will be sorely missed in the immediate future, as will your penetrating approach to present issues. We hope you will stand again in the not too distant future, Joe.

The remaining item is to some extent a personal one. I am privileged to be your Federal Councillor for the ensuing year. I hope you will be satisfied at the end of the year that your selection was the right one. I shall have to lean upon Ted 7EJ for a while to learn the ropes of this office. I would also like to pay a tribute to Ted for undertaking the office of Federal Councillor for the past two years, despite the demands of business, which undoubtedly made attendance at the Convention last year considerably irksome, to say the least. It is sacrifice such as that which makes our Institute what it is.

Ken 7KA has a fresh interest, he is undertaking the construction of a Tamar class dinghy, best of luck with it Ken. Ken is also doing his own cooking during the middle of March while his XYL is in Melbourne.

Charlie 7KS is building up portable gear for the tx hunts, now a feature of our activities. By the way, remember the mobile fox hunt on Tuesday night, 18th April; the money raised is for the new club rooms. 73, Ian 7ZZ.

HAMADS

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